

Project Administration Manual

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Loan Number:

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People's Republic of China: Henan Hebi Qihe River
Environmental Improvement and Ecological
Conservation Project

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ABBREVIATIONS

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Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Hebi City Government (HCG), as the executing agency, and Qibin District Government, Qi County Government, and Xun County Government as the implementing agencies are wholly responsible for the implementation of the project, as agreed jointly between the borrower and ADB; and in accordance with government and ADB policies and procedures. ADB staff is responsible to support implementation including compliance by the HCG of their obligations and responsibilities for project implementation in accordance with ADB policies and procedures.

At loan negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the loan and project agreements. Such agreements shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the loan and project agreements, the provisions of the loan and project agreements shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the project administration instructions) and upon such approval they will be subsequently incorporated in the PAM.

Abbreviations

ADB	–	Asian Development Bank
DMF	–	design and monitoring framework
EIA	–	environmental impact assessment
EMP	–	environmental management plan
FMA	–	financial management assessment
GDP	–	gross domestic product
HCG	–	Hebi City Government
HPFD	–	Hebi Provincial Finance Department
ICB	–	international competitive bidding
LAR	–	land acquisition and resettlement
LIBOR	–	London interbank offered rate
LIEC	–	loan implementation environment consultant
MIS	–	management information systems
NCB	–	national competitive bidding
PAM	–	project administration manual
PCR	–	project completion report
PIU	–	project implementation unit
PIO	–	project implementation office
PMO	–	project management office
PPMS	–	project performance monitoring systems
PPTA	–	project preparatory technical assistance
PRC	–	People's Republic of China
QBS	–	quality based selection
QCBS	–	quality- and cost-based selection
SBD	–	standard bidding documents
SGAP	–	social and gender action plan
SOE	–	statement of expenditure
TOR	–	terms of reference

I. PROJECT DESCRIPTION

A. Project Rationale

1. Rapid economic development in the People's Republic of China (PRC), especially of water resources, has led to severe degradation of ecosystems and the decline of their fundamental services to human well-being.¹ Deforestation of watersheds, combined with point and non-point source pollution, have led to increased runoff, higher peak flows, downstream flooding, and poor water quality in many regions. This has resulted in loss of life and property and has required costly investments for large-scale water management infrastructure and reinforcement of river embankments.

2. The highest environmental agenda of the PRC at present is to attain 'ecological civilization', by increasing investments in restoration of ecosystems and environmental management. Located in the north of Henan Province, Hebi City has a total population of 1.6 million and encompasses 83 kilometers (km), 51% of the entire Qihe River. Originating from Shanxi Province, the Qihe River flows into the Weihe River and then Hai River and finally into the Bohai Sea. The Qihe River basin in Hebi City has been selected as a national pilot project for achieving "Water Ecological Civilization". The key issues affecting the ecological integrity the Qihe River are introduced in the following paragraphs.

3. **Environmental degradation in the upper Qihe River watershed.** Environmental conditions along the river have deteriorated due to intensive economic development and increasing human populations while vegetation, wetlands, and water quality along the Qihe River have declined due to urbanization, modification of the river hydrology, habitat loss and deforestation, livestock grazing, agriculture, over-extraction of water, and non-point source pollution. The 1,300 hectares (ha) of degraded hills within the scope of this project in the upper Qihe are almost completely barren of vegetation. A protected area covers part of the upper Qihe River, the pilot Qihe River National Wetland Park (NWP), but requires habitat restoration and improved facilities and management.²

4. **Poor flood management capacity.** Flood control capacity of the mainstream and tributaries of the lower Qihe River is insufficient due to siltation and the poor condition of old embankments. The flood control capacity of the lower Qihe River mainstream is only for a 1-in-5-year flood, and for 1-in-3-year flood in the tributaries of the lower Qihe River. In Qi County, and Qibin District, the tributaries and canals are heavily silted, congested with solid waste, and have degraded banks.

5. **Pollution from wastewater and solid waste.** Surface water quality of the mainstream Qihe River and canals are highly polluted and exceeded Class III and Class V, respectively.³

¹ Ecosystem services are the direct and indirect contributions of ecosystems to human well-being. They support directly or indirectly our survival and quality of life. (<http://biodiversity.europa.eu/topics/ecosystem-services>)

² "Pilot" refers to the PRC State Forestry Administration's practice for all National Wetland Parks prior to official designation, which only occurs after the assigned management agency has prepared a management plan and other relevant documentation for park management.

³ In the People's Republic of China (PRC), surface water quality and the use of surface water is regulated under the national Environmental Quality Standards for Surface Water Standard (GB 3838-2002), which grades quality and use into five classes: Class I (highest quality) - drinking water sources and national nature reserves; Class II - water source protection areas, and habitats of rare aquatic organisms, including threatened fish and fish and shrimp spawning sites; Class III - suitable as a supply source for drinking water treatment and swimming; Class IV - suitable for general industrial water supply and, recreational use not involving direct human contact with the water; Class V - suitable only for agricultural water supply and general landscaping; and Class V+ (lowest quality) - unsuitable for any use. Each class is also defined by a range of water quality parameters.

Inadequate facilities for wastewater management have resulted in poor water quality as the three existing wastewater treatment plants (WWTP) that serve the project areas of Qibin District and Qi County cannot accommodate the increasing volumes of wastewater. The city sewage pipeline collection network currently covers 60% of the area in Qibin District and Qi County. As a result, untreated wastewater discharges directly to the lower Qihe River mainstream and tributaries.

6. Poor inter-sectoral capacity and coordination mechanisms for river basin and water resource management. Numerous agencies are involved in management of Qihe River, yet there has been relatively limited inter-sectoral coordination for integrated water resources management (IWRM), due to lack of mechanisms for information sharing and monitoring capacity. The multi-sectoral city-level project management office (PMO) that was established during the project preparation phase is the first step for stronger inter-sectoral coordination. Continued capacity building will be essential to supporting IWRM, including a management information system, and ecological monitoring program, to guide decision making among the agencies for flood management, conservation, and other attributes.

7. The Hebi City Government (HCG) has been making various efforts on environmental improvement and ecological conservation in the Qihe River basin, including afforestation, WWTP construction and solid waste management. To address the issues described above, the HCG prepared various plans, including Master Plan for Hebi City Qihe River Ecological Areas for 2010–2020 and Hebi City Urban Flood and Waterlogging Control Plan for 2011–2020.⁴ The HCG requested the Asian Development Bank (ADB) to provide lending support to implement environmental improvement and ecological conservation in and around Qihe River by integrating key activities in the above-mentioned plans in a consistent manner and to support the city's effort in implementation of this pilot initiative on ecological civilization, and therefore a demonstration project for other cities or provinces.⁵

8. Strategic fit. The project contributes to the PRC Government's goal of building a harmonious and prosperous society through regionally balanced and environmentally sustainable growth and the decision of the Third Plenary Session of the 18th Central Committee of the Communist Party of the PRC which supports eco-civilization and establishment of a system to protect ecological environment.⁶ The project also supports ADB's strategic priorities of the Midterm Review of Strategy 2020,⁷ Environment Operational Directions, 2013–2020,⁸ Water Operational Plan, 2011–2020,⁹ and Urban Operational Plan, 2012–2020¹⁰ to increase coverage and improved services for water supply and sanitation, and promote integrated water resources and river basin management.

9. Lessons. The project design has incorporated lessons from other initiatives including previous ADB-financed projects and policy-oriented studies on IWRM, environmental and ecosystem improvement, wetland and lake management and restoration, and urban–rural integration in the PRC. Major lessons include the need for: (i) an integrated approach including

⁴ These plans set targets for 2020, including flood control capacity of the lower Qihe River reach and its tributaries (to meet 1-in-20-year flood).

⁵ The project is included in the 2016 lending pipeline in ADB. 2016. *Transforming Partnership: People's Republic of China and Asian Development Bank, 2016–2020*. Manila; and ADB. 2016. *Country Operations Business Plan: People's Republic of China, 2016–2018*. Manila.

⁶ Held in Beijing from 9–12 November 2013.

⁷ ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

⁸ ADB. 2013. *Environment Operational Directions, 2013–2020*. Manila.

⁹ ADB. 2012. *Water Operational Plan, 2011–2020*. Manila.

¹⁰ ADB. 2013. *Urban Operational Plan, 2012–2020*. Manila.

structural and nonstructural measures, (ii) strong leadership and governance in environmental management, (iii) adequate consultation and better communication with the affected people, (iv) community participation project activities, (v) sustainable management of facilities based on realistic tariff structure, and (vi) management and data information systems for IWRM decision making.

B. Impact and Outcome

10. The impact of the project will be to restore ecosystem services in the Qihe River basin. The outcome of the project is to demonstrate integrated environmental management in the Qihe River basin in Hebi City. The project will improve water security and flood management and enhance the delivery of ecological services.

C. Outputs

11. The project will have four outputs: (i) restored vegetation and wetlands in the upper Qihe River basin; (ii) improved flood management capacity of the lower Qihe River; (iii) enhanced wastewater and solid waste management in the Qihe River basin; and (iv) strengthened technical and institutional support system, and capacity for integrated management of the Qihe River basin.

12. **Output 1** will include two sub-components: (i) Qihe River upstream watershed ecological restoration; and (ii) restoration of the pilot Qihe River NWP. Under sub-component 1(i), 1,300 ha of degraded hills in the upper Qihe River will be reforested to reduce soil erosion. Under sub-component 1(ii), activities in the NWP will include (i) restoration of wetland habitats and river banks; (ii) fencing and signage for protection of targeted species; (iii) park infrastructure improvement; (iv) establishment of park management agency and management plan; (v) establishment of a park monitoring program; and (vi) community participation in park monitoring.

13. **Output 2** will include three sub-components: (i) Qihe River mainstream watercourse improvement in Qi County; (ii) rehabilitation of tributaries in Qi County (Side River, Zhaojia Canal, Hucheng River, and Zhejing River - total 30 km); and (iii) restoration of five canals in Qibin District (total 11.3 km).

14. Sub-component 2(i), will include: (i) the use of green embankment designs which are porous and support the growth of vegetation (14 locations along both banks, total approximately 4 km); and (ii) paving of the access roads along the river embankments (42 km). Sub-component 2(ii) and 2(iii) will improve the flood management capacity of tributaries in Qi County and Qibin District from a 1-in-3-year to a 1-in-5-year flood and improve the overall canal environmental and ecological conditions, through: (i) watercourse widening and dredging; (ii) riverbank protection with embankment and vegetation; and (iii) construction of supporting facilities including irrigation, bank-side walkways and landscaping.

15. **Output 3** will support improved wastewater and solid waste management. The main sub-components are (i) Qibin District wastewater management, (ii) Qi County wastewater management, and (iii) solid waste management in both Qi County and Qibin District.

16. Sub-component 3(i) will involve the installation of about 81.53 km storm water pipelines and about 90.33 km sanitary sewers in Qibin District. Sub-component 3(ii) includes: (i) expanding the capacity of the Qi County WWTP from 30,000 to 60,000 cubic meters per day (m³/d); (ii) construction of 132.49 km storm water pipelines, and (iii) installation of 69.12 km sanitary sewers in Qi County. Sub-component 3(iii) includes: (i) construction of 15 solid waste transfer stations and associated facilities with a designed handling capacity of 20 tons per day

(t/d) in Qi County; (ii) improvement of rural solid waste management in 13 riverside villages in the upper Qihe River and 20 villages in the lower Qihe River, including installation of bins, waste collection stations, and garbage transfer trucks; and (iii) piloting public awareness, community participation, and training in solid waste management.

17. **Output 4** will support (i) establishment of a Qihe River Ecological Monitoring Program; (ii) development of a Qihe River management information system (MIS); and (iii) training and capacity building on ecological conservation, river restoration, wastewater management, solid waste management, and project management and implementation.¹¹

18. The Qihe River Ecological Monitoring Program (subcomponent 4(ii)) will support HCG to (a) monitor the ecological health of the Qihe River; and (b) measure progress of the project activities for wetland conservation and species protection in the pilot Qihe River NWP. Subcomponent 4(ii), the MIS will provide the overarching framework for integrated basin monitoring and management, including flood warning and forecast, and water quality and ecological monitoring.

19. **Innovation and special features.** The project demonstrates an integrated and holistic approach to ecosystem and water resources management in one of the most flood-prone and ecologically sensitive sections of a river system. The integrated approach combines structural and non-structural measures to the differing conditions of the river sections, and include (i) wetland protection and soil erosion reduction in the upper section, (ii) reduction of pollution loads from sewage and solid waste in the upper and middle sections, (iii) flood management in the middle and lower sections, (iv) capacity building of community ‘river guards’,¹² (v) establishment of community environmental monitors, and (vi) development of the MIS. As Hebi City has been selected as a national pilot city for “water ecological civilization”, and “pilot NWP”, this project offers a unique opportunity for demonstration of a successful IWRM model and future replication.

Table 1: Project Outputs and Sub-Components

Output	Activity
1	Vegetation and wetlands in the upper Qihe River basin restored
1.1	Qihe River upstream watershed ecological protection
1.1.1	Barren hill greening (1,300.00 ha; 19 hills)
1.1.2	Barren hill community maintenance (irrigation, pest control, patrol)
1.1.3	Barren hill monitoring of planted vegetation
1.2	Restoration and management of pilot Qihe River National Wetland Park
1.2.1	Habitat restoration and creation (marsh land restoration 36.30 ha; (habitat creation:12.30 ha)
1.2.2	Protection of flagship species (fencing 1,589.00 m; signage: 300 pieces)
1.2.3	Re-vegetation and restoration of riverbanks (3.90 km)
1.2.4	Re-vegetation (49.20 ha)
1.2.5	Infrastructure: (i) upgrade existing public access road (3.20 km) and patrol road (6.30 km); construct new patrol road (2.50 km) and walking paths (4.40 km); (ii) research and monitoring center (500 m ²), field stations (160 m ²), bird hides, ecological monitoring equipment; (iii) management and service facilities (management office, public toilets, power and water supply, drainage)
1.2.6	Establishment of park management agency and first 5-year management plan
1.2.7	Park monitoring program
1.2.8	Community participation in park monitoring (local river guards)
2	Flood management capacity of the lower Qihe River improved

¹¹ For wastewater management, the government has agreed to continue to pursue tariff reform. The project implementation consultants will support the Hebi City Government (HCG) to undertake annual tariff reviews for wastewater tariff, and assess the impact/ affordability of the tariff increase on the poor.

¹² River guards refer to a number of community representatives appointed by the HCG to monitor and report illegal activities or issues affecting the Qihe River. They currently receive little or no training on monitoring of river health.

Output	Activity
2.1	Qihe River mainstream watercourse improvement in Qi County (21 km)
2.1.1	Mainstream bank stabilization (Gabion works - 14 locations along both banks; total works approximately 4 km)
2.1.2	Crest road paving (42 km; 21 km along each bank)
2.2	Four tributary watercourse improvement in Qi County
2.2.1	Channel widening, dredging, bank protection (Side River 9.50 km, Zhaojia Canal 9.80 km, Zhejing River 6.62 km, Hucheng River, including Longxui ditch with a length 5.92 km; total 30.00 km)
2.2.2	Riverside greening (Side River, Zhaojia Canal; total 11.50 km)
2.3	Five canal watercourse improvement in Qibin District
2.3.1	Canal widening, dredging, bank protection (Tianlai 5.15 km, Mianfeng 0.97 km, Erzhi 0.73 km; total 6.85 km)
2.3.2	Canal repair (Sanzhi 2.84 km, Sizhi 1.60 km; total 4.44 km)
2.3.3	Riverside greening at a total length of 11.30 km along Tianlai, Mianfeng, Erzhi canals and Sanzhi and Sizhi canals (up to 15 m width on each river side along Tianlai, Mianfeng, and Erzhi canals, and up to 10 m width along Shanzhi and Sizhi canals)
2.3.4	Supporting facilities (irrigation, bank-side walkways, landscaping)
3	Wastewater and solid waste management in the Qihe River basin enhanced
3.1	Qibin District wastewater management
3.1.1	Storm water pipelines construction (Dalaidian 7.76 km; Juqiao 73.77 km; total 81.53 km)
3.1.2	Sanitary sewer installation (Dalaidian 21.48 km; Juqiao 68.85 km; total 90.33 km). Includes connection to Qibin WWTP + planned Qishuiwan WWTP
3.2	Qi County wastewater management
3.2.1	Qi County WWTP expansion (30,000 m ³ /d to 60,000 m ³ /d)
3.2.2	Storm water pipeline construction (132.49 km)
3.2.3	Sanitary sewer installation (69.12 km)
3.3	Solid waste management in Qi County and Qibin District
3.3.1	Urban - 15 solid waste transfer stations (capacity 20 t/d) including equipment for compaction, odor removal, 44 transport vehicles (Qi County)
3.3.2	Rural - upper Qihe River: install litter bins, waste transport vehicles in 13 villages (Qibin District - 6; Qi County - 7)
3.3.3	Rural - lower Qihe River: install litter bins, waste transport vehicles in 20 villages (Qi County)
3.3.4	Pilot community-led waste management system - awareness raising and waste collection (Qi County and Qibin District)
3.3.5	Domestic study tours for capacity building of relevant agencies and support the development of a better solid waste management system
4	Institutional and technical support system for integrated management of the Qihe River basin strengthened
4.1	Establish and implement a Qihe River Ecological and Hydrological Monitoring Program
4.2	Develop a Qihe River Basin Management Information System
4.3	Training and capacity building on ecological conservation, river restoration, solid waste management and community-based/community-led vegetation/wetland monitoring.
4.2	Loan implementation consulting services
4.3	External resettlement monitoring and evaluation
4.5	Training for project management

ha = hectare, km = kilometer, m = meter, m² = square meter, m³/d = cubic meter per day, WWTP = wastewater treatment plant.

Source: Asian Development Bank.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Indicative Activities	2015												2016												Responsibility
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
Procurement agent recruited																									HCG/ PMO
Advance contracting actions																									executing and implementing agencies
Retroactive financing actions																									executing and implementing agencies
Approval of FCUP																									NDRC
Approval of FSRs																									PDRC
Establishment of project implementation arrangements																									executing and implementing agencies
EIA and resettlement plan approved																									ADB
ADB management review meeting																									ADB
Loan negotiations																									ADB, MOF, HPG, HCG
ADB's Board approval																									ADB
Loan signing																									MOF, HCG, PFD
Government legal opinion provided																									NDRC
Government budget inclusion																									HCG
Loan effectiveness																									ADB, MOF

ADB = Asian Development Bank, EIA = environmental impact assessment, FCUP = foreign capital utilization plan, FSR = feasibility study report, HCG = Hebi City Government, MOF = Ministry of Finance, MRM = management review meeting, NDRC = National Development and Reform Commission, PDRC = Provincial Development and Reform Commission, PFD = Provincial Finance Department, PMO = project management office.

Source: Asian Development Bank estimates.

B. Overall Project Implementation Plan

Indicative Activities	Construction Works	2015				2016				2017				2018				2019				2020				2021			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. Forests and wetlands in the upper Qihe River basin restored																													
1.1 Qihe River upstream watershed ecological protection																													
Engineering design																													
Civil works procurement																													
Equipment procurement																													
Construction																													
Inspection and delivery																													
1.2 Restoration and management of the pilot Qihe River National Wetland Park																													
Engineering design																													
RP update and Land acquisition																													
Civil works procurement																													
Equipment procurement																													
Construction	Habitat restoration																												
	Restoration of riverbanks																												
	Re-vegetation																												
	Infrastructure																												
Inspection and delivery																													
2. Flood management capacity of the lower Qihe River improved																													
2.1 Qihe River mainstream watercourse improvement in Qi County																													
Engineering design																													
RP update and Land acquisition																													
Civil works procurement																													
Equipment procurement																													
Construction	Mainstream bank stabilization																												
	Crest road paving																												
Inspection and delivery																													
2.2 Four tributary watercourse improvement in Qi County																													
Engineering design																													
Land acquisition																													
Civil works procurement																													
Equipment procurement																													

Indicative Activities	Construction Works	2015				2016				2017				2018				2019				2020				2021			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Construction	Channel widening, dredging, bank protection																												
	Riverside greening																												
Inspection and delivery																													
2.3 Five canal watercourse improvement in Qibin District																													
Engineering design																													
RP update and Land acquisition																													
Civil works procurement																													
Equipment procurement																													
Construction	Canal widening, dredging, bank protection																												
	Canal reconstruction																												
	Riverside greening																												
	Supporting facilities																												
Inspection and delivery																													
3. Wastewater and Solid Waste Management in the Qihe River basin enhanced																													
3.1 Qibin District wastewater management																													
Engineering design																													
RP update and Land acquisition																													
Civil works procurement																													
Equipment procurement																													
Construction	Storm water pipeline construction																												
	Sanitary sewer installation																												
Inspection and delivery																													
3.2 Qi County wastewater management																													
Engineering design																													
Land acquisition																													
Civil works procurement																													
Equipment procurement																													
Construction	Qi County WWTP expansion																												
	Storm water pipeline construction																												
	Sanitary sewer installation																												

Indicative Activities	Construction Works	2015				2016				2017				2018				2019				2020				2021							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Inspection and delivery																																	
3.3 Solid waste management in Qi County and Qibin District																																	
Engineering design																																	
RP update and Land acquisition																																	
Civil works procurement																																	
Equipment procurement																																	
Construction	Urban 15 solid waste transfer stations																																
	Rural-upper Qihe River 13 village waste collection																																
	Rural-lower Qihe River 20 village waste collection																																
Inspection and delivery																																	
4. Institutional and technical support system for integrated management of the Qihe River basin improved																																	
Pilot community-led waste management system																																	
External resettlement monitoring and evaluation																																	
Loan implementation consulting services																																	
Project start-up support consulting services																																	
Training for project management																																	
Qihe River ecological Monitoring Program																																	
Qihe River Basin Management Information System																																	

RP = resettlement plan, WWTP = wastewater treatment plant.

Source: Asian Development Bank estimates.

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations—Roles and Responsibilities

1. Project Implementation Organization

Project Implementation Organizations	Management Roles and Responsibilities
Henan Provincial Finance Department (HPFD)	<ul style="list-style-type: none"> • Provide overall project guidance and coordination • Establish and manage the project imprest account • Submit withdrawal applications to ADB • Manage and supervise loan repayment
Hebi City Government (HCG)	<ul style="list-style-type: none"> • Responsible for overall implementation of the project, including land acquisition and safeguards. • Provide overall policy guidance, facilitate inter-agency coordination, and resolve any institutional problems that may affect the project implementation • Supervise the implementing agencies • Facilitate disbursement • Facilitate audit of project accounts • Responsible for providing counterpart funds
Hebi City Finance Bureau (HCFB) Hebi project management office (PMO)	<ul style="list-style-type: none"> • Provide oversight and daily management of the project preparation and implementation • Ensure coordination across sectors • Responsible for overall guidance, coordination, supervision, and management for implementation of the project, including recruitment of project consultants, , land acquisition and safeguards. • Review withdrawal applications prepared by the implementing agencies and facilitate submission to ADB through HCG • Update procurement plan • Provide ADB with (i) semiannual progress reports; (ii) semiannual EMPs; (iii) annual audit reports; and (iv) project completion report • Coordinate training and capacity development activities • Maintain separate accounting records for the project; prepare project financial statements and have them audited • Carry out project performance and compliance monitoring • Disclose project-related information and documents in accordance with ADB guidelines • Coordinate between implementing agencies and HCFB for financial transactions and payment
Qibin District, Implementing agency 1 Qibin District Project Management Office (Qibin District PMO)	<ul style="list-style-type: none"> • Responsible for implementing Qihe River Upstream Ecological Protection subproject • Responsible for implementing Qihe River Wetland Conservation and Rehabilitation subproject • Responsible for implementing Qihe River Five Canal Watercourse Improvement subproject • Jointly responsible for implementing Qi County Wastewater Management subproject • Prepare withdrawal applications for relevant project expenses • Participate in training and capacity development activities • Maintain separate accounting records for the project • Update, implement and monitor land acquisition and resettlement plans
Qi County, Implementing agency 2	<ul style="list-style-type: none"> • Jointly responsible for implementing Qihe River Mainstream

Project Implementation Organizations	Management Roles and Responsibilities
Qi County Project Management Office (Qi County PMO)	<p>Watercourse Improvement in Qi County subproject</p> <ul style="list-style-type: none"> • Responsible for implementing Qihe River Four Tributary Watercourse Improvement in Qi County subproject • Jointly responsible for implementing Qi County Wastewater Management subproject • Prepare withdrawal applications for relevant project expenses • Participate in training and capacity development activities • Maintain separate accounting records for the project • Update, implement and monitor land acquisition and resettlement plans
Xun County, Implementing agency 3 Xun County Project Management Office (Xun County PMO)	<ul style="list-style-type: none"> • Jointly responsible for implementing Qihe River Mainstream Watercourse Improvement in Qi County subproject • Prepare withdrawal applications for relevant project expenses • Participate in training and capacity development activities • Maintain separate accounting records for the project • Update, implement and monitor land acquisition and resettlement plans
ADB	<ul style="list-style-type: none"> • Provide the HCG and implementing agencies with guidance to ensure smooth project implementation and achieve the desired development impacts and their sustainability • Conduct regular loan review, a midterm review, and project completion review missions • Review and approve procurement actions • Approve withdrawal applications and disburse loan proceeds

Source: Asian Development Bank.

2. Implementation Arrangement

Output No.	Proposed Subproject	Implementation Units
1	Vegetation and wetlands in the upper Qihe River basin restored	
1.1	Barren Hill Greening	<ul style="list-style-type: none"> • Qibin District Forestry Bureau
1.2	Qihe River Wetland Conservation and Rehabilitation	<ul style="list-style-type: none"> • Qibin District Forestry Bureau • Qi County Forestry Bureau
2	Flood management capacity of the lower Qihe river improved	
2.1	Qihe River mainstream watercourse improvement in Qi County	<ul style="list-style-type: none"> • Qi County Water Resources Bureau • Xun County Water Resources Bureau
2.2	Four tributary watercourse improvement in Qi County	<ul style="list-style-type: none"> • Qi County Water Resources Bureau
2.3	Five canal watercourse improvement in Qibin District	<ul style="list-style-type: none"> • Qibin District Municipal Administration Division
3	Wastewater and solid waste management in the Qihe River basin enhanced	
3.1	Qibin District Wastewater Management	<ul style="list-style-type: none"> • Qibin District Housing and Rural and Urban Development Bureau
3.2	Qi County Wastewater Management	<ul style="list-style-type: none"> • Qi County Housing and Rural and Urban Development Bureau • Demonstration Area National Land Construction and Environment Protection Bureau
3.3	Solid Waste Management	<ul style="list-style-type: none"> • Qi County Urban Administrative Bureau, • Qibin District Municipal Administration Division
4	Technical and institutional support system, and capacity for integrated management of the Qihe River Basin	
4.1	Qihe River Ecological Monitoring and Management Program	City project management office
4.2	Development of a Qihe River Basin Management Information System	
	Project Management	
	Project start-up support consulting services	City project management office
	Project management support consulting services	
	Resettlement plan implementation, internal and external resettlement monitoring.	
	Environmental monitoring	
	Project performance monitoring (semiannual project progress reports, project completion reports, etc.)	
	Auditing	
	Training for project management	

Source: Asian Development Bank.

B. Key Persons Involved in Implementation

Executing Agency Hebi City Government (HCG)	Officer's Name: Mr. Liu Jiabin Position: Deputy Director Telephone No.: +86 03923314190 Email address: yhdqhxmb@163.com Office address: North Side of the Intersection of Jiuzhou Road and Xinghe Street, Hebi City, Henan Province, PRC
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Project Implementation Units	
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1. Qi County	
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Qi County PMO	Officer's Name: Ms. Yue Zhenhong Position: Director Telephone No.: +86 135 69550999 Office Address: Qihe River Ecological Improvement Construction Office Qi County, Henan Province, PRC
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Qi County Water Resources Bureau	Officer's Name: Mr. Yang Wenjie Position: Director Telephone No.: +86 13839203239 Email address: qxsljggg@126.com Office address: No.18 Zhaoge Road, Qi county, Hebi City, Henan Province, PRC
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Qi County Housing and Urban-rural Construction Bureau	Officer's Name: Mr. Sun Shicun Position: Director Telephone No.: +86 13839203234 Email address: qxjsj@126.com Office address: No.108 Tongji Avenue North Side, Qi County, Hebi City, Henan Province, PRC
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Qi County Urban Administrative Enforcement Bureau	Officer's Name: Mr. Wang Shijie Position: Director Telephone No.: +86 13603926188 Email address: qxljcl@163.com Office address: No.37 Mid Hongqi Road (The Old Qi County Committee), Qi County, Hebi City, Henan Province, PRC
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Qi County Forest Bureau	Officer's Name: Mr. Huang Taihui Position: Director Telephone No.: +86 13603926058 email address: qxlyj@163.com Office address: Intersection of Zhaoge road and Shang jie road, Qi County, Hebi City, Henan Province, PRC
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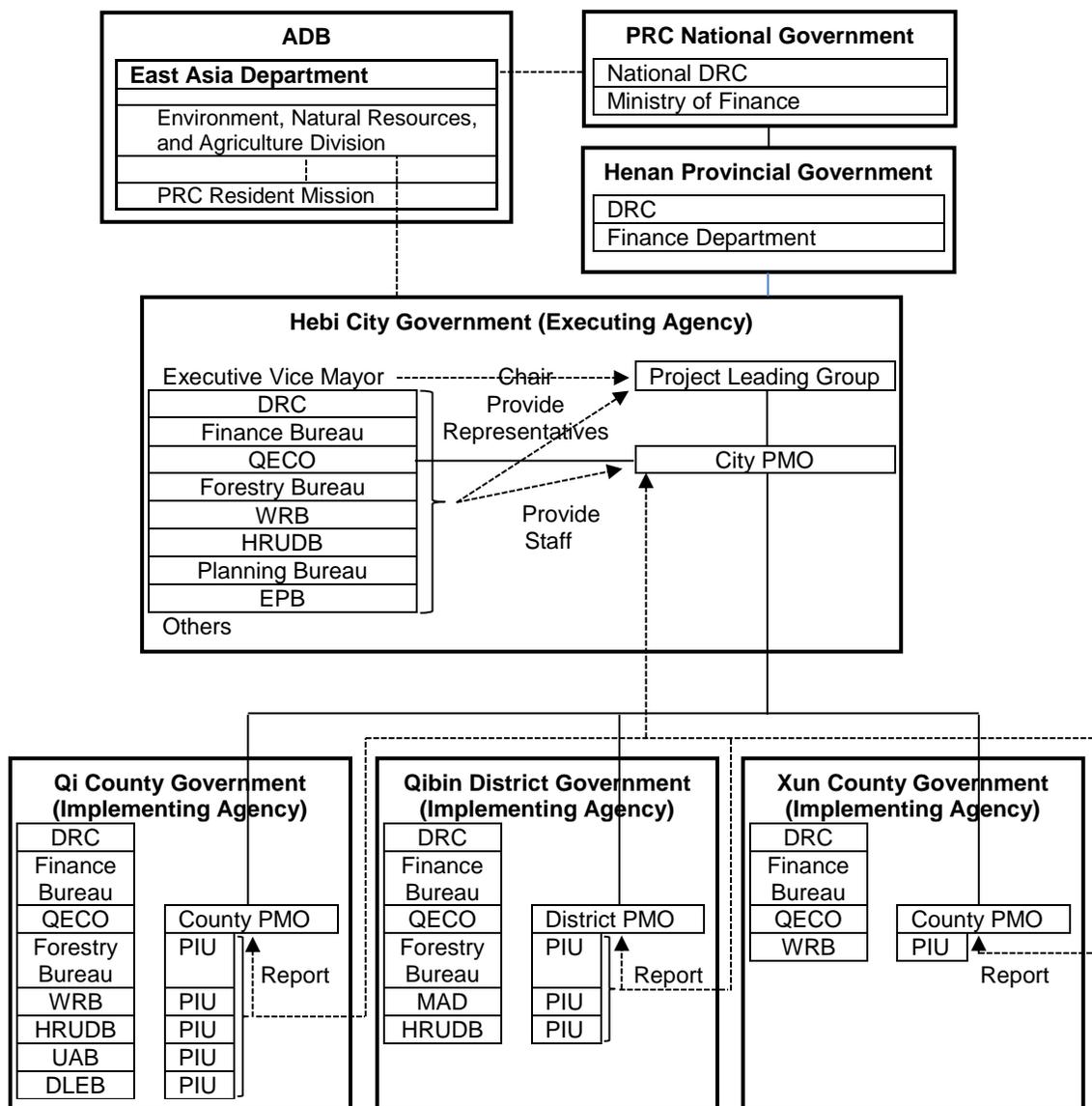
2. Qibin District	
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Qibin District PMO	Officer's Name: Mr. Hu Chengan Position: Director Telephone No.: +86 139 3925 8603 Email address: hu410@126.com Office address: Qihe River Ecological Improvement Construction Office Qibin District, Henan Province, PRC
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Qibin District Forestry Bureau	Officer's Name: Mr. Xu Zuming Position: Deputy Director Telephone No.: +86 15939217530 Email address: hbsqbqlyj@126.com Office address: No.240 Liyang Road (Liyang Office Building) Qibin District, Hebi City, Henan Province, PRC
Qibin District Municipal Administration Division	Officer's Name: Mr. Zhang Shujun Position: Manager Telephone No.: +86 18239209969 Email address: hbsqbqlyj@126.com Office address: 3 rd floor, Intersection of Zhujiang Road and Huangshan Road, Qibin District, Hebi City, Henan Province, PRC
Qibin District Housing and Urban-rural Construction Bureau	Officer's Name: Ms. Wang Pingling Position: Deputy Director Telephone No.: +86 13343929889 Email address: qbqcjj@126.com Office address: 25 th floor, South Side of the intersection of Zhaoge Road and Qibin Avenue (Lianhe Mansion), Qibin District, Hebi City, Henan Province, PRC
3. Xun County	
Xun County Water Resources Bureau	Officer's Name: Mr. Zhao Ruogu Position: Director Telephone No.: +86 0392 5503135 Email address: yxw888@139.com Office address: No.178 Chaoxi Road, Xun County, Hebi City, Henan Province, PRC
Asian Development Bank	
East Asia Department Environment, Natural Resources, and Agriculture Division	Staff Name: Mr. Qingfeng Zhang Position: Director Telephone No.: +63 2 632 6769 Fax No.: +63 2 636 2534/2444 Email address: qingfengzhang@adb.org
Mission Leader	Staff Name: Mr. Alvin Lopez Position: Natural Resources and Agriculture Specialist Telephone No.: +63 2 683 1760 Fax No.: +63 2 636 2534 Email address: alopez@adb.org

Source: Asian Development Bank.

C. Project Organization Structure



EPB = Environmental Protection Bureau, DLEB = Demonstration Area National Land Construction and Environment Protection Bureau, DRC = Development and Reform Committee, HCG = Hebi City Government, HRUDB = Housing and Rural Urban Development Bureau, MAD = Municipal Administration Division, QECO = Qihe River Ecological Conservation and Construction Office, PMO = project management office, PRC = People's Republic of China, UAB = Urban Administration Bureau, WRB = Water Resources Bureau
 Source: Asian Development Bank.

IV. COSTS AND FINANCING

20. The project is estimated to cost \$325.4 million, including physical and price contingencies and financial charges during implementation. The government has requested a loan of \$150 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including (i) a grace period of 5 years, (ii) straight-line repayment method, (iii) annual interest rate determined in accordance with ADB's London interbank offered

rate (LIBOR)-based lending facility, (iv) commitment charge of 0.15% per year to be charged on the undisbursed loan amount, and (v) other terms and conditions set in the loan agreements. The average loan maturity is 15.25 years and the maturity premium payable to ADB is 0.1% per annum. ADB's Controller's Department will provide the final confirmation and issue the loan repayment schedule at loan negotiations. Financial charges during implementation will be capitalized.

21. The ADB loan will finance 46.1% of the project cost, including civil works, goods, and consulting services. The Government of the PRC is the borrower of the loan and will make the loan available, through the Henan Provincial Government and HCG, to the responsible county and district governments on the same terms and conditions as those of the ADB loan. Municipal, county and district governments will assume the foreign exchange and interest variation risks of the ADB loan, including contingencies. The HCG has assured ADB that counterpart funding will be provided in a timely manner, including any counterpart funding required for any shortfall of funds or cost overruns.

A. Cost Estimates Preparation and Revisions

22. **Preparation.** The cost estimates were prepared by the HCG based on the feasibility study in accordance with ADB's Guidelines on Preparing and Presenting Cost Estimates for Projects and Programs Financed by ADB.¹³

23. **Revisions.** The cost estimates may be updated prior to approval and during the implementation of the project.

B. Assumptions

24. The following assumptions underpin the cost estimates:

- a. Exchange rate: CNY 6.2 = \$1.0 (as of 2 August 2015)
- b. Price contingencies based on expected inflation over the implementation period:

Item	2016	2017	2018	2019	2020
Domestic rate of price inflation	2.3%	2.4%	2.5%	2.5%	2.5%
Foreign rate of price inflation	1.5%	1.4%	1.5%	1.5%	1.5%

Source: Asian Development Bank estimates.

C. Investment and Financing Plan

Table 2: Project Investment Plan
(\$ million)

Item	Total Cost ^b
A. Base Costs^a	
1. Vegetation and wetlands in the upper Qihe River basin restored	34.6
2. Flood management capacity of the lower Qihe river improved	70.4
3. Wastewater and Solid Waste Management in the Qihe River Basin enhanced	153.0
4. Institutional and technical support system and capacity for integrated management of the Qihe River Basin strengthened	3.9

¹³ ADB. 2014. *Preparing and Presenting Cost Estimates for Projects and Programs Financed by the Asian Development Bank*. Manila.

Item	Total Cost^b
Subtotal (A)	261.9
B. Contingencies^c	55.5
C. Financing Charges During Implementation^d	8.0
Total Project Cost (A+B+C)	325.4

^a Includes taxes and duties of \$10.68 million, \$5.91 million of which will be financed by government counterpart funds, and \$4.77 million by the Asian Development Bank (ADB) loan. The amount of taxes and duties to be financed by ADB is based on the principles that (i) the amount will be within the reasonable threshold identified during the country partnership strategy preparation process, (ii) the amount of taxes and duties financed by the ADB loan does not represent excessive share of the project, (iii) the taxes and duties apply only to ADB-financed expenditures, and (iv) the financing of taxes and duties is material and relevant to the success of the project.

^b As of 2 August 2015. In 2015 prices.

^c Physical contingencies computed at 10% of base costs. Price contingencies were computed using the escalation factors published by ADB on local and foreign components of the project costs; includes provision for potential exchange rate fluctuation using the purchasing power parity of exchange rate concept.

^d Includes interest and commitment charges. Interest during construction for the ADB loan has been computed at the 5-year US dollar fixed swap rate plus a spread of 0.50% and a maturity premium of 0.10%. Commitment charge for the ADB loan is 0.15% per year to be charged on the undisbursed loan amount.

Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

Table 3: Financing Plan
(\$ million)

Item	Total Costs	Percent (%)
ADB loan (ordinary capital resources)	150.0	46.1
Qibin District	79.0	24.3
Qi County	90.7	27.9
Xun County	5.0	1.5
Hebi City Government	0.7	0.2
Total	325.4	100.0

Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

A. Detailed Cost Estimates by Expenditure Category

Item	CNY Million			\$ Million			Percent of base (%)
	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange	Local Currency	Total Cost	
A. Investment Costs							
Civil works	0.00	1,290.30	1,290.30	0.00	208.11	208.11	79.44
Equipment and goods	0.00	53.72	53.72	0.00	8.66	8.66	3.31
Land acquisition and resettlement	0.00	109.76	109.76	0.00	17.70	17.70	6.76
Survey, design, supervision and monitoring	0.00	146.30	146.30	0.00	23.60	23.60	9.01
Training and study tours ^a	3.00	0.00	3.00	0.48	0.00	0.48	0.18
Consulting services and project management	18.72	2.41	21.13	3.02	0.39	3.41	1.30
Sub-total A	21.72	1,602.49	1,624.22	3.50	258.47	261.97	100.00
B. Contingencies							
Physical	2.17	160.25	162.42	0.35	25.85	26.20	10.00
Price	1.54	180.10	181.64	0.25	29.05	29.30	11.18
Sub-total B	3.71	340.35	344.06	0.60	54.89	55.49	21.18
C. Financing Charges During Implementation							
Interest During Construction	46.05	0.00	46.05	7.43	0.00	7.43	2.83
Commitment Charge	3.36	0.00	3.36	0.54	0.00	0.54	0.21
Sub-total C	49.41	0.00	49.41	7.97	0.00	7.97	3.04
Total Project Cost (A+B+C)	74.84	1,942.84	2,017.69	12.07	313.36	325.43	124.22

^a Covers the costs of study tours, workshops, and seminars such as venue, materials, and travel expenses of participants.

Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

B. Allocation and Withdrawal of Loan Proceeds

CATEGORY		ADB FINANCING BASIS	
No.	Item	Total Amount Allocated (\$)	Percentage and Basis for Withdrawal from the Loan Account
01	Civil works	129,714,952	62% of total expenditure claimed
02	Goods	8,664,527	100% of total expenditure claimed
03	Training, seminars and workshops ^a	483,871	100% of total expenditure claimed
04	Consulting services and project management	3,167,419	100% of total expenditure claimed
05	Interest and commitment charges	7,969,231	100% of total amount due
06	Total	150,000,000	

Numbers may not sum precisely because of rounding.

^a Covers the costs of domestic and international training, workshops, and seminars.

Source: Asian Development Bank estimates.

C. Detailed Cost Estimates by Financier

Item	Total Costs	ADB loan		Qibin District		Qi County		Xun County		Hebi Municipal Government	
		Amount (\$ million)	% Cost category	Amount (\$ million)	% Cost category						
A. Investment Costs											
Civil works	208.11	129.72	62.2	35.79	17.2	40.63	19.5	2.22	1.1	0.00	0.0
Equipment and goods	8.66	8.66	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Land acquisition and resettlement	17.70	0.00	0.0	8.40	47.5	8.61	48.6	0.70	3.9	0.00	0.0
Survey, design, supervision and monitoring	23.60	0.00	0.0	10.49	44.4	12.59	53.3	0.52	2.2	0.00	0.0
Training and study tours ^a	0.48	0.48	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Consulting services and project management											
(i) ADB financed	3.17	3.17	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.00
(ii) Government financed	0.24	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.24	100.0
Sub-total A	261.97	142.03	54.2	54.56	20.8	61.70	23.6	3.43	1.3	0.24	0.1
B. Contingencies											
Physical	26.20	0.00	0.0	11.47	43.8	13.61	51.9	0.73	2.8	0.39	1.5
Price	29.30	0.00	0.0	12.86	43.9	15.33	52.3	0.81	2.8	0.29	1.0
Sub-total B	55.49	0.00	0.0	24.33	43.8	28.94	52.1	1.55	2.8	0.68	1.2
C. Financing Charges During Implementation											
Interest charges	7.43	7.43	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Commitment fee	0.54	0.54	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Sub-total C	7.97	7.97	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Total Project Cost (A+B+C)	325.43	150.00	46.1	78.89	24.2	90.64	27.9	4.98	1.5	0.93	0.3

^a Covers the costs of study tours, workshops, and seminars.

Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

D. Detailed Cost Estimates by Outputs/Components

Item	Total	Ecological Protection		Watercourse Improvement		Wastewater Management		Institutional and Technical Support	
		Amount (\$ million)	% Cost Category	Amount (\$ million)	% Cost Category	Amount (\$ million)	% Cost Category	Amount (\$ million)	% Cost Category
A. Investment Costs									
Civil works	208.11	23.58	11.3	54.77	26.3	129.75	62.3	0.000	0.0
Equipment and goods	8.66	1.64	19.0	0.67	7.8	6.35	73.3	0.000	0.0
Land acquisition and resettlement	17.70	6.42	36.3	10.25	57.9	1.03	5.8	0.000	0.0
Survey, design, supervision and monitoring	23.60	3.00	12.7	4.74	20.1	15.86	67.2	0.000	0.0
Training and study tours ^a	0.48	0.00	0.0	0.00	0.0	0.00	0.0	0.484	100
Consulting services and project management	3.41	0.00	0.0	0.00	0.0	0.00	0.0	3.409	100.0
Sub-total A	261.97	34.64	13.2	70.43	26.9	153.00	58.4	3.893	1.5
B. Contingencies									
Physical	26.20	3.46	13.2	7.04	26.9	15.30	58.4	0.389	1.5
Price	29.30	3.66	12.5	7.61	26.0	17.73	60.5	0.293	1.0
Sub-total B	55.49	7.13	12.8	14.65	26.4	33.03	59.5	0.683	1.2
C. Financing Charges During Implementation									
Interest during construction	7.43	0.94	12.7	1.96	26.4	4.34	58.5	0.181	2.4
Commitment charges	0.54	0.07	13.2	0.15	26.9	0.32	58.4	0.008	1.5
Sub-total C	7.97	1.01	12.7	2.11	26.4	4.66	58.5	0.189	2.4
Total Project Cost (A+B+C)	325.43	42.78	13.1	87.19	26.8	190.69	58.6	4.765	1.5

^a Covers the costs of study tours, workshops, and seminars.

Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

E. Detailed Cost Estimates by Year

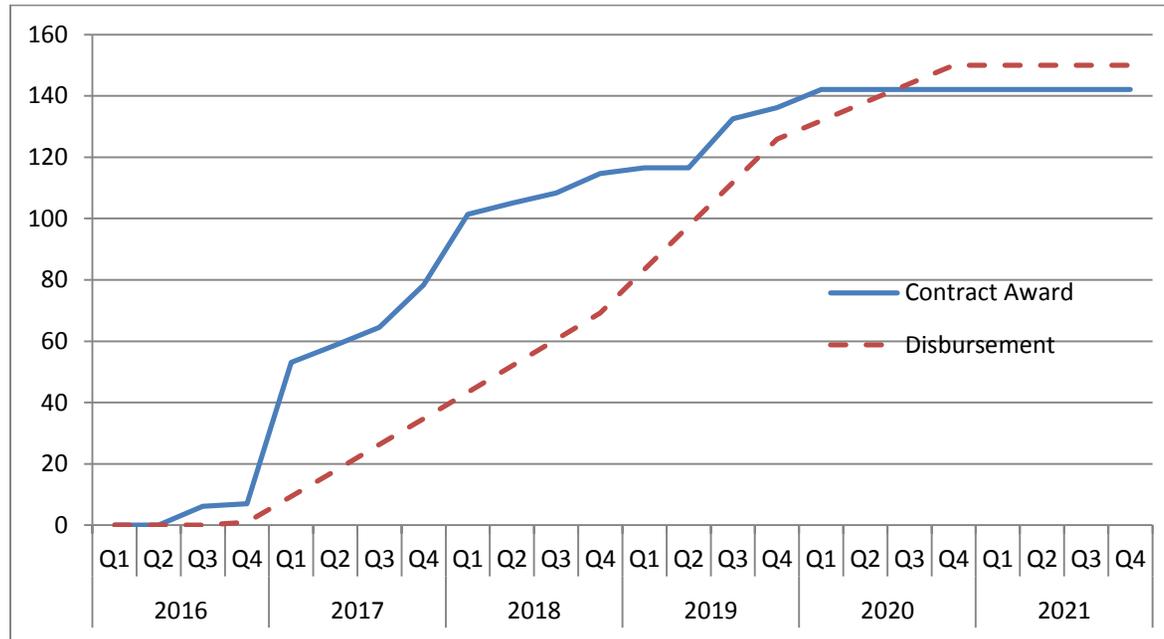
Item	Total Costs	2016	2017	2018	2019	2020
A. Investment Costs						
Civil works	208.11	10.41	31.22	52.03	83.25	31.22
Equipment and goods	8.66	0.43	1.30	2.17	3.47	1.30
Land acquisition and resettlement	17.70	8.85	8.85	0.00	0.00	0.00
Survey, design, supervision and monitoring	23.60	1.18	3.54	5.90	9.44	3.54
Training and study tours ^a	0.24	0.01	0.04	0.06	0.10	0.04
Consulting services and project management	3.65	0.18	0.55	0.91	1.46	0.55
Sub-total A	261.97	21.06	45.49	61.07	97.71	36.64
B. Contingencies						
Physical	26.20	2.11	4.55	6.11	9.77	3.66
Price	29.30	0.96	3.31	6.22	12.87	5.95
Sub-total B	55.49	3.06	7.86	12.32	22.64	9.61
C. Financing Charges During Implementation						
Interest during construction	7.43	0.12	0.53	1.22	2.30	3.25
Commitment charges	0.54	0.21	0.17	0.12	0.04	0.00
Sub-total C	7.97	0.33	0.71	1.35	2.33	3.25
Total Project Cost (A+B+C)	325.43	24.46	54.06	74.74	122.68	49.50
% Total costs						
Of Which:						
ADB loan	150.00	10.61	24.16	34.47	56.65	24.12
Qibin District	79.00	6.43	13.62	18.03	29.57	11.36
Qi County	90.76	6.95	15.30	20.95	34.36	13.21
Xun County	4.99	0.44	0.89	1.12	1.84	0.71
Hebi City Government	0.68	0.03	0.10	0.17	0.28	0.10

^a Covers the costs of study tours, workshops, and seminars.

Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

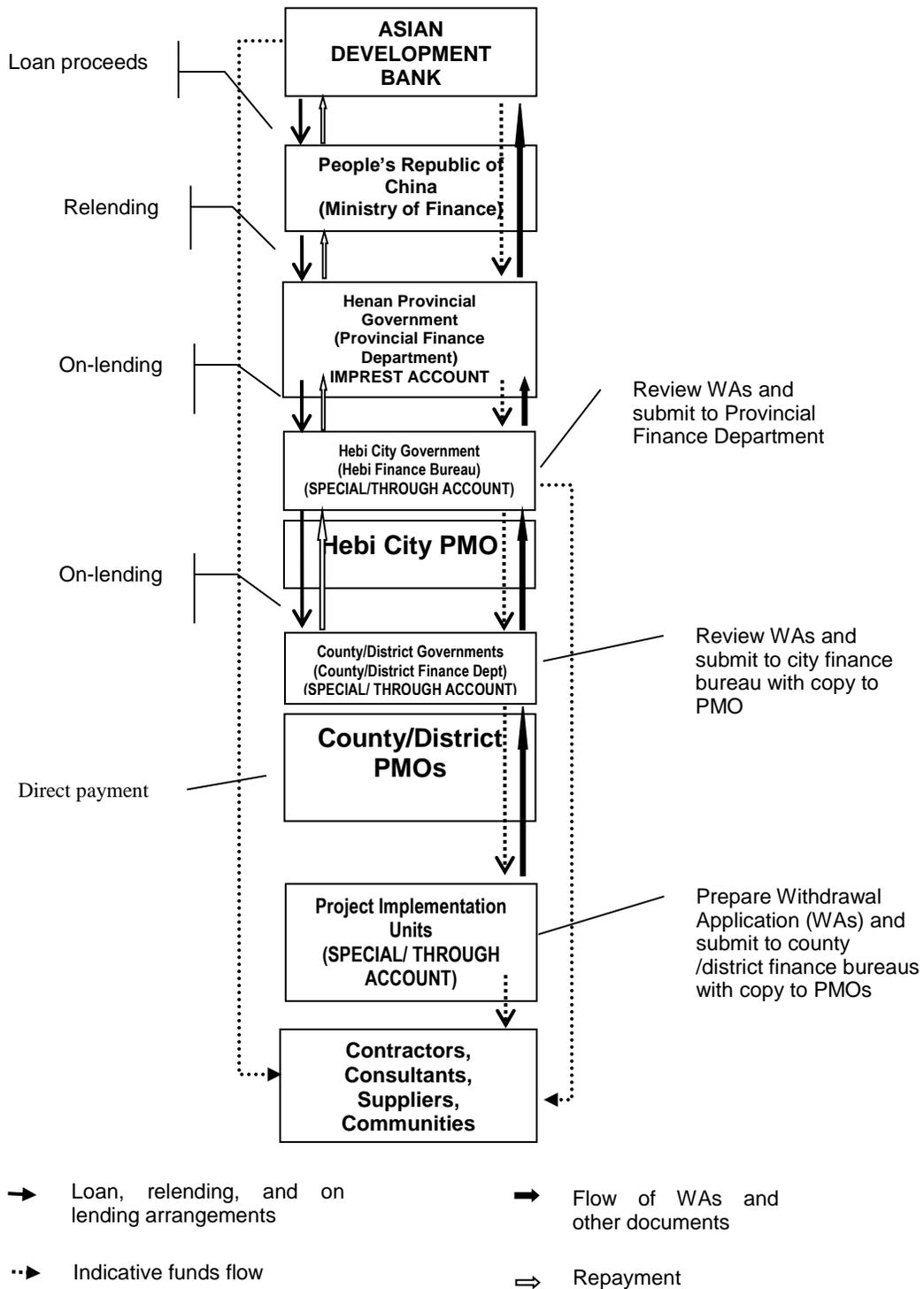
F. Contract Awards and Disbursement S-Curve



	Disbursement					Total	Contract Award					Total
	Q1	Q2	Q3	Q4	Q1		Q2	Q3	Q4			
2016	0.00	0.00	0.00	0.92	0.92	0.000	0.00	6.20	0.84	7.05		
2017	8.46	8.46	8.46	8.46	33.85	46.01	5.63	5.80	13.82	71.26		
2018	8.62	8.62	8.62	8.62	34.47	23.06	3.62	3.36	6.37	36.40		
2019	14.16	14.16	14.16	14.16	56.64	1.81	0.00	15.97	3.73	21.51		
2020	6.03	6.03	6.03	6.03	24.12	5.82	0.00	0.00	0.00	5.82		
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total					150.0					142.03		

Source: Asian Development Bank estimates.

G. Funds Flow Diagram



Source: Asian Development Bank.

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

25. The financial management assessment (FMA) was conducted in July 2015 in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects, Financial Due Diligence: a Methodology Note, and Technical Guidance Note: Financial Management Assessment. The FMA considered the financial management capacity of the nine Project Implementation Units (PIU) established within the Qibin District, Qi County and Xun County, and the Project Management Office (PMO) established within the HCG, the executing agency. The assessment covered funds-flow arrangements, staffing, accounting and financial reporting systems, internal and external auditing arrangements, and financial information systems.

26. The assessment identified the main financial management risks as: (i) implementation risk - lack of familiarity with ADB disbursement procedures and requirements which could delay project implementation, (ii) compliance risk - lack of familiarity with ADB financial management requirements, particularly on accounting, reporting, and auditing, which may delay project reporting and derail identification of issues on the use of loan proceeds, (iii) financing risk – delays in provision of or inadequate counterpart funding which could delay project implementation, and (iv) financial risk - inadequate wastewater and solid waste tariffs that could impact financial sustainability. The overall financial management risk rating of the project before considering mitigating measures is Medium. The identified financial management risks will be closely monitored during project implementation. The financial management action plan is as follows:

Table 4: Financial Management Action Plan

Action	Responsibility	Timing
Covenants included in the legal agreements to ensure adequate counterpart funds to support capital, operating and maintenance, and debt repayment requirements	PMO and ADB	Before loan signing
Training on ADB financial management requirements, including accounting and auditing	PMO/Provincial Finance Bureau	3 months before effectiveness
Training on ADB disbursement procedures and requirements	PMO/Provincial Finance Bureau	1 month before first disbursement
The PMO and PIUs will set up the project accounts	PMO	3 months after effectiveness
Discussion on possible interventions to review tariff structure and identify strategy for tariff reforms	PMO and ADB	1st year of project implementation

ADB = Asian Development Bank, PIU = project implementation unit, PMO = project management office.
Source: Asian Development Bank.

B. Disbursement

27. The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available at: http://wpqr4.adb.org/disbursement_elearning. Project staff is encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

28. **Imprest fund procedure.** To facilitate project implementation through timely release of loan proceeds, Henan Provincial Finance Department (HPFD) will establish an imprest account promptly after loan effectiveness at a commercial bank acceptable to ADB. The imprest account is to be used exclusively for the ADB's share of eligible expenditures. The currency of the imprest account will be US dollar. HPFD, who established the imprest account in its name, is accountable and responsible for proper use of advances to the imprest account. The total outstanding advance to the imprest account should not exceed the estimate of ADB's share of expenditures to be paid through the imprest account for the forthcoming 6 months. HPFD may request for initial and additional advances to the imprest account based on an Estimate of Expenditure Sheet setting out the estimated expenditures to be financed through the account for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by HPFD in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) when liquidating or replenishing the imprest account.

29. **Statement of Expenditure (SOE) procedure.** The SOE procedure¹⁴ may be used for reimbursement of eligible expenditures or liquidation of advances to the imprest account. The ceiling of the SOE procedure is the equivalent of US\$100,000 per individual payment. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit. Reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation when submitting the withdrawal application to ADB.

30. The minimum value per withdrawal application is US\$100,000 equivalent. Individual payments below this amount should be paid by the HCG/implementing agencies and subsequently claimed from ADB (i) through reimbursement; or (ii) from the imprest account, unless otherwise accepted by ADB.

31. No withdrawals shall be made from the loan account until the government has certified to ADB that on-lending agreement and project implementation agreement have been duly executed and delivered between HCG and the local governments.

C. Accounting

32. The HCG will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project using the Accounting Methods for Projects Financed by the World Bank (reference No. 2000 [13]).¹⁵ The HCG will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations, which are consistent with international accounting principles and practices.

D. Auditing

33. HCG will cause the detailed consolidated project financial statements to be audited in accordance with national auditing standards by an independent auditor acceptable to ADB. The

¹⁴ SOE forms are available in Appendix 9B and 9C of ADB's *Loan Disbursement Handbook* (2015, as amended from time to time).

¹⁵ Accounting regulations issued by the Ministry of Finance for all foreign aid-funded projects.

audited project financial statements together with the auditors' opinion will be submitted in the English language to ADB within 6 months of the end of the fiscal year by the HCG.

34. The annual audit report for the project accounts will include an audit management letter and audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan and grant proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the use of the SOE procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) and the project documents.

35. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

36. The government, HCG, and the implementing agencies have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements. ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

37. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011). After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

VI. PROCUREMENT AND CONSULTING SERVICES

38. A project procurement risk assessment was conducted for the project, in accordance with the Guide on Assessing Procurement Risks and Determining Project Procurement Classification.

39. Overall project procurement risk is moderate. Main risks identified are (i) staff of Engineering Department (established in the city PMO) which will conduct all procurements and consultant recruitments for the project do not have experience in internationally-financed projects; and (ii) there are some discrepancies between HCG's and ADB's procurement practices. The second risk was mitigated since the city PMO and its Engineering Department committed to fulfill ADB's requirements for all procurements and consultant recruitments for the project.

40. To mitigate the first risk, training on ADB's requirements for procurement and consultant recruitments was provided to the staff of Engineering Department during project preparation. To further mitigate the first risk, it is proposed that (i) Engineering Department, with support from an individual procurement consultant and a procurement agency, prepare manuals for procurements and consultant recruitments which fulfil ADB's requirements, at project start-up;

(ii) the individual procurement consultant will provide the staff with training on procurement and consultant recruitments, at project start-up; (iii) a procurement specialist of the project management support consultant team continue such training; (iv) the consultants and the procurement agency help the staff conduct procurement and consultant recruitments for the project; (v) ADB continue to give guidance and instructions to the staff; and (vi) ADB closely monitor procurement and consultant recruitment activities.

A. Advance Contracting and Retroactive Financing

41. All advance contracting and retroactive financing should be undertaken in conformity with ADB's Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The issuance of invitations for bid under advance contracting and retroactive financing will be subject to ADB's prior review and approval. The approval of advance contracting and retroactive financing does not commit ADB to subsequently approve the project or to finance the procurement costs.

42. Advance contracting will be undertaken with the following conditions:

- (i) Resettlement plan and environment management plan (EMP) have been reviewed and cleared by ADB.
- (ii) In case land acquisition and resettlement (LAR) activities commence ahead of approval of the resettlement plan, resettlement due diligence report (by an external monitor, confirming that the resettlement plan implementation is in accordance with the resettlement plan and ADB policies and procedures) should be prepared in addition to the resettlement plan itself.
- (iii) All conditions precedent to contract award such as approval of finalized resettlement plan (and due diligence report) reflecting detailed measurement survey and approval of environmental impact assessment (EIA).

43. The HCG was advised that retroactive financing may only apply up to the equivalent of 20% of the total ADB loan, to cover eligible expenditures incurred for works, goods, consulting services, and training procured through advance contracting before loan effectiveness, but not more than 12 months before the signing of the loan agreement.

44. Approval of advance contracting does not commit ADB to finance the project. The amount to be retroactively financed does not exceed 20% of the loan and will be incurred before loan effectiveness but not earlier than 12 months before the signing of the related legal agreement.

45. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time)¹⁰ and the Procurement Reform - 10 Point Action Plan and associated reforms. Before the start of any procurement, ADB and the government will review the public procurement laws of the central and provincial governments to ensure consistency with ADB's Procurement Guidelines.

B. Procurement of Goods, Works and Consulting Services

1. ICB Procedures

46. International competitive bidding (ICB) procedures will be used for civil works contracts estimated to cost \$40 million equivalent or above and for goods valued at \$3 million equivalent or more.

47. Unless otherwise specified, procurement under ICB procedures will use the single-stage one-envelope modality. Procurement shall use the latest ADB standard bidding documents which can be downloaded from ADB website.

2. NCB Procedures

48. National competitive bidding (NCB) will be used for civil works contracts estimated to cost over \$100,000 equivalent up to below \$40 million. While, NCB will be used for goods and equipment from over \$100,000 to below \$3 million, equivalent.

49. For procurement under NCB, the following provisions should be applied: (i) the advertisement may be limited to the national press, an official gazette or an open access website; (ii) bidding shall follow the standard bidding documents issued by the Ministry of Finance and approved by ADB; and (iii) bidding documents may be only in the Chinese language, and CNY may be used for the purpose of bidding and payment. NCB contracts with cost of \$500,000 or more for goods and \$1,000,000 or more for works will also be advertised in Business Opportunities of ADB's website.

50. Shopping will be allowed for contracts valued at \$100,000 equivalent or less for civil works and goods, respectively. The relevant sections of ADB's Anticorruption Policy (1998, as amended to date) will be included in procurement documents and contracts.

3. Community Participation

51. The procurement method of community participation will be adopted for Environmental Management Mechanism, considering the intensive participation will be employed for the implementation. The detailed implementation plan needs to be approved by ADB. And the threshold of \$100,000 will be applied if any works or equipment procurement is involved.

4. Consulting Services

52. Project management consulting services and capacity development services will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).¹⁶ The Hebi PMO will be responsible for engaging consultants through quality- and cost-based selection (QCBS) for the project management and capacity development consulting service.¹⁷

5. Thresholds for ADB Review

53. For goods and works contracts estimated to cost \$10 million or more, prior review of the following documents is required: invitation for bids, bidding documents, bid evaluation report, draft negotiated contract, signed contract, and contract variations. ADB's no objection is required for each step of procurement.

54. The first ICB and NCB contracts for goods and works will be for ADB's prior review irrespective of the estimated value. All contracts under advance contracting are subject to prior review. Approval of ADB of the procurement documents (prequalification, bidding, contract, etc.) is required.

¹⁶ Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation>

¹⁷ TOR guidelines available at: <http://www.adb.org/sites/default/files/institutional-document/31340/csom.pdf>

55. Procurement for goods and works contracts with value less than \$10 million are subject to post review. Documents in English language must be submitted for post review no later than 1 month after they are completed or issued.

C. Procurement Plan

56. A procurement plan indicating procurement or selection methods, estimated costs of contracts, thresholds and review procedures for goods, works, community participation and consulting service contract packages is found below. The procurement plan shall be executed in the manner in which it has been approved by ADB. The procurement plan shall be updated annually or as needed throughout the duration of the project.

Basic Data

Project Name: Henan Hebi Qihe River Environmental Improvement and Ecological Conservation Project	
Country: People's Republic of China	Executing Agency: Hebi City Government
Project Procurement Classification [A or B]: B	Implementing Agencies: Qibin District, Xun County, Qi County
Procurement Risk: Moderate	
Project Financing Amount: US\$325,400,000 ADB Financing: US\$150,000,000 Non-ADB Financing: US\$175,400,000	Project Closing Date: 30 June 2022
Date of First Procurement Plan: 1 September 2015	Date of this Procurement Plan: 27 April 2016

Methods, Thresholds, Review, and 18-Month Procurement Plan

1. Procurement, Consulting Methods, and Thresholds

57. Except as ADB may otherwise agree, the following process thresholds shall apply to procurement of goods and works:

Procurement for Goods and Works	
Methods	Threshold (\$)
International Competitive Bidding (ICB) for works (and plants)	=> \$40,000,000
International competitive bidding for goods	=> \$3,000,000
National competitive bidding for works (and plants)	> \$100,000 and < \$40,000,000
National competitive bidding for goods	> \$100,000 and < \$3,000,000
Shopping for works	=< \$100,000
Shopping for goods	=< \$100,000
Community participation for works	=< \$100,000

Procurement for Consulting Services	
Methods	Comments
Quality and Cost Based Selection (QCBS)	- A consultant team for project management support (about \$1.30 million) - A consultant team for Qihe River ecological monitoring and rehabilitation study (about \$0.61million) - A consultant team for development of Qihe River basin numerical modelling system (about \$0.66 million)
CQS	CQS may be used for small assignments (usually less than \$200,000) - An external monitor for resettlement monitoring and evaluation (about \$0.19 million)
ICS	- Two individual consultants for project implementation startup support

	consulting services
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2. Goods and Works Contracts Estimated to Cost \$1 Million or More

58. The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months:

Package Number	General Description	Estimated Value (\$ million)	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comment
Goods							
WW-E-01	Equipment for Qi County WWTP expansion (from 30,000 m ³ /d to 60,000 m ³ /d)	3.18	ICB	Prior	1S1E	Q3/2016	First and only ICB goods contract
SW-E-01	Solid waste collection equipment for 33 villages in Qihe River basin in Qibin District and Qi County	1.10	NCB	Prior	1S1E	Q3/2016	First NCB goods
SW-E-02	Equipment for 7 solid waste transfer stations (20 ton/day/station) in Qi County	1.45	NCB	Post	1S1E	Q4/2016	
Works							
EC-CW-01-1	Barren Hills Greening (1) (Hongyu, Xiaohejian, and Niuhengling in Dahejian Township)	2.11	NCB	Post	1S1E	Q3/2016	
EC-CW-01-2	Barren Hills Greening (2) (Panshitou, Gongjiazhuang, Hekou Village, and Mahengleng in Dahejian Township)	1.75					
WL-CW-01	Qihe River Ecological Wetland rehabilitation (Qibin County)	10.51	NCB	Prior	1S1E	Q3/2016	
WL-CW-02	Qihe River Ecological Wetland rehabilitation (Qi County)	5.08	NCB	Post	1S1E	Q3/2016	
QM-CW-01	Riverbank stability reinforcement for 5 locations and 21 km dyke crest road construction (Xun County Section)	5.02	NCB	Post	1S1E	Q4/2016	
QX-CW-01	Watercourse dredging, improvement and greening works (Side River)	9.34	NCB	Prior	1S1E	Q1/2016	Advance contracting First NCB

Package Number	General Description	Estimated Value (\$ million)	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comment
QX-CW-02	Watercourse dredging, improvement and greening works (Zhaojia Canal)	4.57	NCB	Post	1S1E	Q3/2016	works
QX-CW-03	Watercourse dredging, improvement and greening works (Zhejiang River, Hucheng River and Longxu Ditch)	2.93	NCB	Post	1S1E	Q3/2016	
QB-CW-01	Watercourse improvement, greening and associated facilities (Tianlai Canal)	10.42	NCB	Prior	1S1E	Q3/2016	
WW-CW-01	Storm water pipeline and sewer construction (1) (Daliandian District (1))	3.70	NCB	Post	1S1E	Q4/2016	
WW-CW-08	Qi County WWTP Expansion Civil Works (from 30,000 m ³ /day to 60,000 m ³ /day)	4.63	NCB	Post	1S1E	Q3/2016	
WW-CW-11	Storm water pipeline and sewer construction 10 (Old urban area of Qi County Capital Town (1))	19.45	NCB	Prior	1S1E	Q3/2016	
WW-CW-14	Storm water pipeline and sewer construction (Tiexi District of Qi County (1))	4.90	NCB	Post	1S1E	Q3/2016	
WW-CW-17	Storm water pipeline and sewer construction (Main pipes to Qi County WWTP)	1.91	NCB	Post	1S1E	Q3/2016	

3. Consulting Services Contracts Estimated to Cost \$100,000 or More

59. The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months:

Package Number	General Description	Estimated Value (\$ million) ^a	Recruitment Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS1 ^{b,c}	Project implementation consulting services	1.3	QCBS	Prior	Q1/2016	FTP	90:10 International

Package Number	General Description	Estimated Value (\$ million) ^a	Recruitment Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
	for project management support and capacity development						
CS2	External resettlement monitoring services	0.19	CQS	Prior	Q4/2015	BTP	National For advance contracting and retroactive financing
CS4	Qihe River ecological monitoring and management program (plants, organisms, water quality, wetland, and mainstream watercourse improvement in the Qihe River basin)	0.61	QCBS	Prior	Q3/2016	FTP	90:10 National
CS5	Qihe River basin 3D digital system development	0.66	QCBS	Prior	Q1/2017	FTP	90:10 International

BTP = biodata technical proposal, CQS = consultants' qualifications selection, FTP = full technical proposal, ICS = individual consultant selection, km = kilometer, m³ = cubic meter, N/A = not applicable, QCBS = quality- and cost-based selection.

^a All contract values include physical contingencies.

^b Request for advance contracting.

^c A budget of \$483,871 for training, workshops and seminars will be included as part of loan financing outside of this package but preparation of a training and study tour plan and arranging the trainings and tours is included in the terms of reference of this consulting package.

4. Goods and Works Contracts Estimated to Cost Less than \$1 million and Consulting Services Contracts Less than \$100,000

60. The following table groups smaller-value goods, works, and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months:

Goods and Works							
Package Number	General Description	Estimated Value (\$ million)	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
SW-CW-01	7 Solid Waste Stations Civil Works (20 tons/day/station) in Qi County	0.53	NCB	Post	1S1E	Q3/2016	
CP1 ^a	Community Participation Environmental Management Mechanism	0.32	CP	Post	NA	Q1/2017	

^a There will be 39 small packages with value less than \$10,000. Detailed packaging will be finalized by loan implementation consultant.

Consulting Services							
Package Number	General Description	Estimated Value (\$ million)	Recruitment Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS3	Project implementation startup support consulting services	0.08	ICS	Prior	Q4/2015	NA	Two individual consultants will be recruited through two separate packages For advance contracting and retroactive financing

Indicative List of Packages Required under the Project

61. The following table provides an indicative list of goods, works, and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the 18 months period):

Goods and Works

Package Number	General Description	Estimated Value (\$ million)^a	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
WL-ME-01	Wetlands monitoring equipment	1.29	NCB	Post	1S1E	Q2/2017	
SW-E-03	Equipment for 8 solid waste transfer stations (20 ton/day/station) in Qi County	1.65	NCB	Post	1S1E	Q4/2017	
EC-CW-02-1	Barren Hills Greening (3) (Xiekuang and Shangyu in Shangyu Township)	0.89	NCB	Post	1S1E	Q1/2017	
EC-CW-02-2	Barren Hills Greening (4) (Laowangyan, Sangyuan, Baijianshan, Bailongmiao, and Zhifang in Shangyu Township)	1.45					
EC-CW-02-3	Barren Hills Greening (5) (Luchang, Nanshan, and Anledong in	1.40					

Package Number	General Description	Estimated Value (\$ million) ^a	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	Shangyu Township)						
EC-CW-02-4	Barren Hills Greening (6) (Xugou and Xuanwuyan Qaurry in Jinshan)	0.39					
QM-CW-02	Riverbank stability reinforcement for 3 locations and 6.5 km dyke crest road construction (Qi County Section: Starting point - 11+000)	2.12	NCB	Post	1S1E	Q1/2017	
QM-CW-03	Riverbank stability reinforcement for 3 locations and 7 km dyke crest road construction (Qi County Section: 11+000 - 18+000)	5.20	NCB	Post	1S1E	Q1/2018	
QM-CW-04	Riverbank Stability Reinforcement of 3 locations and 7.5 km Dyke Crest Road Construction (Qi County Section: 18+000 - 25+500)	4.35	NCB	Post	1S1E	Q1/2019	
QB-CW-02	Watercourse improvement, greening and associated facilities (Mianfeng, Erzhi, Sanzhi and Sizhi Canals)	10.81	NCB	Prior	1S1E	Q2/2017	
WW-CW-02	Storm water pipeline and sewer construction (2) (Daliandian District (2))	1.74	NCB	Post	1S1E	Q1/2017	
WW-CW-03	Storm water pipeline and sewer construction (3) (Jujiao District	5.07	NCB	Post	1S1E	Q2/2017	

Package Number	General Description	Estimated Value (\$ million) ^a	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	(1))						
WW-CW-04	Storm water pipeline and sewer construction (4) (Jujiao District (2))	9.86	NCB	Post	1S1E	Q2/2018	
WW-CW-05	Storm water pipeline and sewer construction (5) (Jujiao District (3))	10.65	NCB	Prior	1S1E	Q3/2019	
WW-CW-06	Storm water pipeline and sewer construction (6) (Jujiao District (4))	20.37	NCB	Prior	1S1E	Q1/2019	
WW-CW-07	Storm water pipeline and sewer construction (7) (Main pipes from Jujiao District to Qishuiwan WWTP)	7.91	NCB	Post	1S1E	Q3/2017	
WW-CW-09	Storm water pipeline and sewer construction (8) (Rural-Urban Integrated Demonstration District)	5.60	NCB	Post	1S1E	Q4/2017	
WW-CW-10	Storm water pipeline and sewer construction (9) (Heqi Industry Cluster District)	5.78	NCB	Post	1S1E	Q2/2019	
WW-CW-12	Storm water pipeline and sewer construction 11 (Old urban area of Qi County Capital Town (2))	7.25	NCB	Post	1S1E	Q3/2017	
WW-CW-13	Storm water pipeline and sewer construction 12 (Old urban area of Qi County Capital Town (3))	2.81	NCB	Post	1S1E	Q3/2018	
WW-CW-	Storm water	3.99	NCB	Post	1S1E	Q3/2017	

Package Number	General Description	Estimated Value (\$ million) ^a	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
15	pipeline and sewer construction (Tiexi District of Qi County (2))						
WW-CW-16	Storm water pipeline and sewer construction (Tiexi District of Qi County (3))	14.65	NCB	Prior	1S1E	Q3/2018	
SW-CW-02	8 Solid Waste Stations Civil Works (20 tons/day/station) in Qi County	0.61	NCB	Post	1S1E	Q2/2017	

NCB = national competitive bidding.

^a All contract values include physical contingencies.

Advance Contracting and Retroactive Financing

62. The loan effectiveness is scheduled to be in Q2 2016. The following table provides an indicative list of packages for advance contracting.

Contract No.	General Description	Value of Contracts ^a (\$ million)	Number of Contracts	Procurement/ Recruitment Method	Advertisement Date (quarter/year)
QX-CW-01	Watercourse dredging, improvement and greening works (Side River)	9.34	1	NCB	Q1/2016
CS1	Project implementation consulting services for project management support and capacity development	1.30	1	QCBS	Q1 2016
CS2	External resettlement monitoring services	0.19	1	CQS	Q4/2015
CS3	Project implementation startup support consulting services includes the following: 1. Project management specialist 2. Resettlement specialist	0.08	2	ICS	Q4 2015

ICS = individual consultant selection, NCB = national competitive bidding, Q = quarter, QCBS = quality- and cost-based selection, WWTP = wastewater treatment plant.

^a All contract values include physical contingencies.

Non-ADB Financing

63. The following table list goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

Consulting Services							
Package Number	General Description	Estimated Value (\$ million) ^a	Recruitment Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
	External environmental	0.24	NBF	NA	Q2/2016	NA	

monitoring						
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National Competitive Bidding

64. The Borrower's Law of Tendering and Bidding of the PRC promulgated by Order No. 21 of the President of the PRC on August 30, 1999, are subject to the following clarifications required for compliance with the Guidelines:

- (i) All invitations to prequalify or to bid shall be advertised in the national press, or official gazette, or a free and open access website in the Borrower's country. Such advertisement shall be made in sufficient time for prospective bidders to obtain prequalification or bidding documents and prepare and submit their responses. In any event, a minimum preparation period of 30 days shall be given. The preparation period shall count (a) from the date of advertisement, or (b) when the documents are available for issue, whichever date is later. The advertisement and the prequalification and bidding documents shall specify the deadline for such submission;
- (ii) Qualification requirements of bidders and the method of evaluating the qualification of each bidder shall be specified in detail in the bidding documents, and in the prequalification documents if the bidding is preceded by a prequalification process;
- (iii) If bidding is preceded by a prequalification process, all bidders that meet the qualification criteria set out in the prequalification document shall be allowed to bid and there shall be no limit on the number of prequalified bidders;
- (iv) All bidders shall be required to provide a performance security in an amount sufficient to protect the borrower/project executing agency in case of breach of contract by the contractor, and the bidding documents shall specify the required form and amount of such performance security;
- (v) Bidders shall be allowed to submit bids by mail or by hand;
- (vi) All bids shall be opened in public; all bidders shall be afforded an opportunity to be present (either in person or through their representatives) at the time of bid opening, but bidders shall not be required to be present at the bid opening;
- (vii) All bid evaluation criteria shall be disclosed in the bidding documents and quantified in monetary terms or expressed in the form of pass/fail requirements;
- (viii) No bid may be rejected solely on the basis that the bid price falls outside any standard contract estimate, or margin or bracket of average bids established by the borrower/project executing agency;
- (ix) Each contract shall be awarded to the lowest evaluated responsive bidder, that is, the bidder who meets the appropriate standards of capability and resources and whose bid has been determined (a) to be substantially responsive to the bidding documents and (b) to offer the lowest evaluated cost. The winning bidder shall not be required, as a condition of award, to undertake responsibilities for work not stipulated in the bidding documents or otherwise to modify the bid as originally submitted;
- (x) Each contract financed with the proceeds of the loan shall provide that the suppliers and contractors shall permit ADB, at its request, to inspect their accounts and records relating to the performance of the contract and to have said accounts and records audited by auditors appointed by ADB;
- (xi) Government-owned enterprises in the borrower's country may be permitted to bid if they can establish that they (a) are legally and financially autonomous, (b) operate under commercial law, and (c) are not a dependent agency of the borrower/project executing agency; and

- (xii) Rebidding shall not be allowed solely because the number of bids is less than three (3).

D. Consultant's Terms of Reference

65. The consulting services to be financed by the loan are divided into five packages: (i) Package CS1: project implementation support (international firm); (ii) Package CS2: external social and resettlement monitoring (national agencies), (iii) Package CS3: project implementation startup support (international and national consultants); (iv) Package CS4: Qihe River ecological monitoring and management; and (v) Package CS5: Qihe River basin management information and modelling system development.

66. The scope and tasks of the consulting services financed by the loan are described below. The PMO on behalf of HCG and the county/district governments will be responsible for engaging all the five consulting service contract packages in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).

67. In addition to the consulting services financed by the loan, domestically funded consulting services will also be recruited by the PMO and PIUs. The PMO in coordination with the PIUs will recruit a tendering agency to provide tendering support including preparation of bidding documents, invitation for bids and bid evaluation reports, and engage domestic design institutes to carry out preliminary and detailed designs. Construction supervision engineers will also be recruited for overseeing and inspecting the construction sites to ensure compliance with national regulations, safety standards, and the ADB requirements. Different engineering consultants will be recruited for design of different subcomponents in river rehabilitation, wetland restoration, wastewater collection and treatment, re-vegetation and barren hill greening.

No.	Package Name	Details
1. Packages financed by the ADB loan:		
CS1	Project implementation consulting services for project management support and capacity development	An international firm with international and national experts. Selected by the PMO in coordination with the PIUs through ADB's QCBS (90:10) selection method. Expected duration: 5 years.
CS2	External social and resettlement monitoring services	A national firm selected by the PMO in coordination with the PIUs through ADB's CQS selection method. Expected duration: Intermittent input from the project start to 2 years after the completion of resettlement.
CS3	Project implementation start-up support consulting services	Individual consultants: a project management specialist and a resettlement specialist Expected duration: 9 months Selected by the PMO in coordination with the PIUs through ADB's ICS selection method.
CS4	Qihe River ecological monitoring and management	A national firm will be selected by the PMO in coordination with the PIUs through ADB's QCBS (90:10) selection method. Expected duration: 5 years.
CS5	Qihe River basin management information and 3D modelling system development	An international firm with international and national experts, an international team leader and national deputy team leader. Selected by the PMO in coordination with the PIUs through ADB's QCBS (90:10) selection method. Expected duration: 2 years.
2. Packages financed by counterpart funding:		
A	National design institutes	The PMO in coordination with PIUs will engage and finance domestic design institutes to carry out preliminary and detailed engineering

No.	Package Name	Details
B	National tendering agency	designs. Domestic procurement regulations will be followed. The PMO in coordination with the PIUs will engage a domestic tendering agency with experience in the ICB and NCB bidding for ADB projects. Domestic procurement regulations will be followed.
C	National construction supervision engineers	The PIUs will engage a domestic consultant for each works contract following domestic regulations on engineering supervision and procurement. Expected duration: from 1 month before the commencement of construction works to 1 month after the completion.

ADB = Asian Development Bank, CQS = consultant qualification selection, ICB = international competitive bidding, ICS = individual consultant selection, NCB = national competitive bidding, PIU = project implementation units, HCG = Hebi City Government, PMO = project management office, QCBS = quality- and cost-based selection.
Source: Asian Development Bank.

1. Project Management Consulting Services for Project Implementation Support (Package CS1)

68. Project management consulting services for project implementation support and capacity development will be engaged through QCBS selection method with a standard quality: cost ratio of 90:10 with the full technical proposal procedure. The estimated input includes 10 person-months of international consultant input and 136 person-months of national consultant input.

Area of Expertise ^a	International (person-months)	National (person-months)
1 Team leader/deputy team leader: water resource specialist/construction management specialist	10	48
2 Procurement and contract management specialist		18
3 Wastewater engineering specialist		8
4 Solid waste management specialist		5
5 Forest specialist		8
6 River engineer		6
7 Financial management and disbursement specialist		9
8 Environmental specialist		12
9 Social, gender and community participation specialist		10
10 Resettlement specialist		12
Total person-months	10	136

^a In addition some specialists will be engaged as resource persons to carry out specific training programs and events.

Source: Asian Development Bank estimates.

69. Detailed tasks include, but are not limited to, the following:

- (i) Assist the PMO in setting up the institutional framework, operational procedure, document control, design supervision, and contract management systems for the project; and the work plan to guide and facilitate the project implementation. This should utilize and adapt, as necessary, the arrangements set up for the earlier ADB projects in Henan Province;
- (ii) Establish a project performance management system (PPMS) based on the framework developed during the PPTA, in accordance with ADB requirements, including establishing baseline and operation mechanism for data collection, analysis, and reporting;
- (iii) Develop comprehensive project implementation plans and procedures for monitoring and controlling overall project activities;

- (iv) Conduct technical review, and provide expert comments on detailed engineering design in accordance with the design codes and standards;
- (v) Reviewing designs, drawings, and the bidding documents, including the identification of potential technical problems and suggestions for their means of resolution; and incorporation of environmental and climate risk mitigation measures, where appropriate;
- (vi) Ensure that the bidding documents include for contractors to provide equipment operation and maintenance (O&M) manuals in Chinese, and that training in equipment and maintenance is adequately provided for;
- (vii) Conduct technical, financial, and procedural review of bid evaluation; and hold contract negotiations;
- (viii) Conduct routine site visits and provide technical support and inputs to all project components (including pilot community-based waste management), construction planning, supervision, and monitoring for quality control of the project;
- (ix) Conduct contract management, including monitoring construction progress, preparing semiannual progress reports, reviewing the contractors' claims for payments, coordinating project implementation among contractors and various stakeholders, and coordinating daily operational tasks;
- (x) Conduct technical review for construction supervision and management, including (a) approval of construction methods; (b) ensuring work is undertaken according to the intent of contract specifications; (c) control over construction quality; (d) adherence to contract work programs and recovery of slippage; (e) site health and safety procedures; (f) record keeping systems to protect client interests in event of claims; and (g) claims assessment and determination;
- (xi) Provide expert inputs, review, and justification for contract variation; and prepare necessary documentations in accordance with the government's and ADB requirements, if necessary;
- (xii) Provide expert inputs on asset commissioning and handover, including a review of documentation provided by the contractors; and that they have fully discharged their training obligations;
- (xiii) Establish an efficient and effective financial management system for the project implementation in accordance with ADB's policy and procedural requirements, and implement such financial management system;
- (xiv) Identify areas for improvement and training needed with respect to the quality of financial statements, disclosure, and notes to the financial statements; and develop templates for the annual financial statements;
- (xv) Review disbursement applications and supporting documents;
- (xvi) Collect all necessary information, edit, draft, and submit the reports required under the loan and project covenants on a timely manner;
- (xvii) Review and update the environmental management plan (EMP) and assist in conducting internal monitoring of the EMP implementation;
- (xviii) Assist the PMO and implementing agencies in managing the environmental external monitoring agency for conducting periodic environmental impact monitoring in compliance with the approved monitoring plan defined in the EMP;
- (xix) Review the gender action plan (GAP), the resettlement plan, and the social development action plan (SDAP); and conduct internal monitoring of the implementation of the GAP, SDAP, and the resettlement plan on a semiannual basis;

- (xx) Provide expert opinions to ensure effectiveness of the project components' environmental and climate risk mitigation measures and enhancement package implementation;
- (xxi) Collect periodic information for PPMS update;
- (xxii) Prepare necessary information for ADB's loan administration missions, including the loan midterm, annual, and completion review missions;
- (xxiii) Update the project financial status, project cost tables and financing plan, economic and financial analyses, and safeguard implementation;
- (xxiv) Organize and provide semiannual training on effective project financial management, procurement, disbursement, safeguards, and anticorruption measures;
- (xxv) Organize and provide semiannual training on the skills necessary for construction supervision, project management, and implementation of social and environmental safeguards for the ADB requirements;
- (xxvi) Undertake a short study on annual tariff reviews for wastewater tariff, and assess the impact and affordability for the poor of the tariff increase, including feasibility of treated wastewater reuse;
- (xxvii) Consult with concerned stakeholders, particularly the poor; and ensure the poor's participation in the public hearing process for tariff increase in accordance with the PRC government's policies and regulations;
- (xxviii) Provide training on prevention and control of transmissible diseases and HIV/AIDS, and community disturbance to contractors;
- (xxix) Advise and train contractors, and supervise companies on ADB's policy and procedural requirements to ensure their full compliance;
- (xxx) Sample and monitor environmental data related to the project, and contract out the official environmental monitoring services to an accredited environmental monitoring station;
- (xxxi) Ensure project environmental readiness, including: (i) all contractor contracts include, and will comply with, the EMP; and (iii) relevant sections of the EMP are incorporated in construction plans and contracts;
- (xxxii) Assist the PMO and PIUs to implement the grievance redress mechanism (GRM), including: (i) establish and publicize the GRM; and (ii) collate and evaluate grievances received;
- (xxxiii) Develop procedures to: (i) monitor EMP implementation progress; (ii) collate and evaluate data collected in the EMP environmental monitoring program; and (iii) prepare and submit the semiannual environmental monitoring reports to ADB (to continue until project completion report);
- (xxxiv) Undertake training of project agencies as required by the EMP training plan;
- (xxxv) Provide hands-on support and on-the-job training to the PMO, implementing agencies, and contractors on the specific requirements of the EMP, as required;
- (xxxvi) Undertake site visits to all implementing agencies during subproject construction and operating phase;
- (xxxvii) Assist in the ongoing public consultation process as described in the project EIA;
- (xxxviii) Conduct EMP compliance assessments, identify any environment-related implementation issues, and propose necessary responses in corrective action plans;
- (xxxix) Undertake training of project agencies as required by the EMP training plan;
- (xl) Assist the PMO to prepare semiannual environmental monitoring progress reports for submission to ADB;

- (xli) Recommend resolutions to any issues or problems on implementing the EMP and resettlement plan;
- (xlii) Develop and submit the semiannual progress reports, including the internal social, resettlement, and environmental monitoring reports, with quality acceptable to ADB; and
- (xlili) Prepare a project completion report within 3 months of project completion.

Table 5: Cost Estimates for Project Management Consulting Services for Project Implementation Support (Contract Package CS1) (\$'000)

Item	Amount
A. Financed by the ADB loan^a	
1. Consultants	
Remuneration and per diem (incl. fees, international/domestic travel)	
i. International consultants	250.0
ii. National consultants	952.0
2. Local transportation	48.0
3. Contingencies	50.0
Subtotal (A)	1,300.0
B. Counterpart financed through in-kind contribution^b	
Subtotal (B)	130.0
Total (A+B)	1,430.0

^a All cost estimates financed by ADB are inclusive of taxes and duties.

^b To ensure the satisfactory provision of the consulting services, the HCG will provide the consultant with office space with desks and chairs, local transport for project meetings and site visits; qualified fulltime bilingual counterpart personnel in the PMO to work with the consultants; assistance with visas, and residential and other permits required by the consulting team to enter and work in the PRC; and access to all data, including documents, reports, accounts, drawings and maps, and permissions, as appropriate and necessary to undertake the assignment, free of charge.

Source: Asian Development Bank estimates.

70. Details of terms of reference (TOR) for project implementation support consulting services (Package CS-1) will be developed by the project procurement and management specialist in the Project Implementation Startup Support Consulting Services (Package CS-3).

Package CS2 - External Resettlement Monitoring Services

Objective and Scope of Work

71. A national resettlement consulting institute/firm will be engaged for the duration of project implementation to act as an external resettlement monitor (ERM). The institute with an estimated input of 22 person-months of national consultants will be engaged by the CQS method. All the consultants will be duly qualified with respective qualifications and with at least 8 years of experience in their respective fields relevant to project's requirements. Specific tasks include:

- (i) Conduct baseline surveys for the six resettlement plans prior to commencement of land acquisition and house demolition;
- (ii) Assess the implementing agencies resettlement readiness prior to implementation;
- (iii) Conduct semiannual investigations to assess resettlement implementation and prepare monitoring and evaluation reports that summarize progress, key issues and recommendations;
- (iv) Assess the effectiveness of the GRM, and follow-up on any complaints to ensure they are resolved timely and adequately;
- (v) Prepare semiannual resettlement monitoring and evaluation reports for submission to ADB and HCG;

- (vi) Once LAR is completed, conduct surveys in the project counties to assess the affected household's satisfaction with resettlement implementation, particularly income restoration and house/business relocation, and assist the PMO to document the results in the resettlement completion report.

Outlined Budget

72. The estimated cost for the external resettlement monitoring services is shown in the table below.

Table 6: Cost Estimates for External Resettlement Monitoring Services (Contract Package CS2) (\$'000)

Item	Amount ^a
1. Consultants	
Remuneration and per diem (incl. fees, domestic travel)	
i. National consultants	154.0
2. Surveys and data collection	26.0
3. Contingencies	10.0
Total	190.0

^a All cost estimates financed by ADB are inclusive of taxes and duties.
Source: Asian Development Bank estimates.

Package CS3 - Project Implementation Startup Support Consulting Services

Objective and Scope of Work

73. The purpose of the project implementation start-up support consulting services is to assist the PMO in project implementation to (i) procure national companies for construction supervision; (ii) procure an international company for project support and capacity development; (iii) assist the PMO and PIUs in preparing civil works and procurement contracts; (iv) update resettlement plans and prepare the implementing agencies to commence implementation; (v) provide support to resettlement activities; and (v) establish a filing system for document reporting, tracking, and retaining.

74. The start-up support consulting services will include a total input of 9 person-months by 2 individual national consultants to work the PMO and PIUs. The individual experts will be engaged in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The consultants will be selected and engaged following the individual consultant selection (ICS) method and will work on an intermittent basis with a schedule agreed with the PMO. The two experts to be recruited are (i) Project Procurement and Management Specialist, and (ii) Resettlement Specialist.

Inputs and Outline Budget

75. The input for the two consultants and associated cost estimates are shown in below.

Table 7: Summary of Project Implementation Startup Support Consulting Services

Area of Expertise	Duration (person-months)
National	
Project procurement and management specialist	5
Resettlement specialist	4

Area of Expertise	Duration (person-months)
Total	9

Source: Asian Development Bank estimates.

Table 8: Cost Estimates for Project Implementation Startup Support Consulting Services (Contract Package CS3) (\$'000)

Item	Amount ^a
1. Consultants Remuneration and per diem national consultants (incl. fees, domestic travel)	77.0
2. Contingencies	3.6
Total	80.6

^a All cost estimates financed by ADB are inclusive of taxes and duties.

Source: Asian Development Bank estimates.

Implementation Arrangements

76. The consulting services will be carried out over a 6-month period. The consultants will work directly for the PMO. The two individual consultants will work directly for the PMO.

Project Procurement and Management Specialist

77. The Procurement Specialist will have a university degree or above in management, accounting, or related field with demonstrated knowledge in procurement procedures and processes. He/she will have at least 10 years of experience in procurement of civil works, goods and services in the PRC, including international competitive bidding, preferably on projects funded by the ADB or other international funding agencies. Knowledge of ADB or other international funding agency procurement guidelines and procedures will be required. This position requires English language proficiency. Tasks and responsibilities of the specialist include but are not limited to the following:

- (i) Organize and maintain a project filing system according to specifications by the PMO and ADB. This filing system is for both hard copy and electronic files and will be used by all startup consultants and the PMO office;
- (ii) Provide administrative and operational assistance to the PMO;
- (iii) Assist in preparing procurement packages for advance contracting including detailed TORs for project implementation consultants and other consulting services packages;
- (iv) Organize procurement processes and prepare documents, including bidding documents, specifications, bid evaluation reports, etc., for preparation of procurement packages intended for advance contracting;
- (v) Provide assistance to the PMO and to the tender evaluation committee during the tendering process in preparing the following in accordance with ADB's Procurement Guidelines (2015, as amended from time to time): (a) detailed terms of reference for relevant packages in consultation with relevant technical experts, (b) invitations to bid, (c) answers to bidders' queries, and (d) bid evaluation reports;
- (vi) Coordinate the ADB during tender evaluation;
- (vii) Assist the PMO in preparing necessary documents for contract signing and contractor/consultant mobilization;
- (viii) Prepare a report on the status of project startup and procurement; and
- (ix) Handover documents and files to the project implementation support consultant firm and report on the current status and outstanding issues.

Resettlement Specialist

78. The Resettlement Specialist will have a university degree or above in resettlement, social or related field with demonstrated experience. He/she is proficient in English and shall have at least 10 years of experience in resettlement in the PRC on projects funded with ADB or other international funding agencies. Knowledge in resettlement safeguard policies and procedures by the ADB or other international funding agencies is required. Tasks and responsibilities of the resettlement specialist include, but are not limited to, the following:

- (i) Assist the implementing agencies to update the RPs based on final design, detailed measurement surveys and census of affected persons;
- (ii) Assist to implementing agencies /PIUs to ensure adequate resettlement readiness prior to implementation;
- (iii) Assist the PMO/implementing agencies to establish an effective Grievance Redress Mechanism with reporting of complaints, follow-up actions and results;
- (iv) Provide training to the PMO and the implementing agencies /PIUs so they understand ADB policies and compliance requirements for resettlement;
- (v) Assist the PMO and implementing agencies in establishing an internal resettlement monitoring and reporting system, which will be included in project progress reports; and
- (vi) Assist the PMO and implementing agencies in handing over relevant documents and files to the project implementation support consultant firm and brief on the current status and outstanding issues.

Package CS4 - Qihe River Ecological Monitoring and Management

79. This contract is proposed to be a single service delivery package using the ADB's QCBS procedure with an indicative budget of \$612,900. The service includes baseline surveys and analyses on biodiversity and implementation of ecological monitoring in the Qihe River basin for pre- and post-project implementation scenarios.

80. The input for the two consultants and associated cost estimates are shown in the tables below.

Table 9: Summary of Consultant Input for Qihe River Ecological Monitoring and Management

Area of Expertise	Duration (person-months)
National	
Ecological monitoring specialist	28
Wetland ecologist	20
Total	48

Source: Asian Development Bank estimates.

Table 10: Cost Estimates for Qihe River Ecological Monitoring and Management Consulting Services (Contract Package CS4) (\$'000)

Item	Amount ^a
1. Consultants	
Remuneration and per diem national consultants (incl. fees, domestic travel)	336.0
2. Survey and data collection	120.0
3. Transportation, travel	50.0
4. Local transportation	17.0
5. Sampling and lab testing	59.0

Item	Amount ^a
6. Local support and administration	20.0
7. Contingencies	10.0
Total	612.0

^a All cost estimates financed by ADB are inclusive of taxes and duties.
Source: Asian Development Bank estimates.

Outline Terms of Reference for Consultants

Ecological Monitoring Specialist

81. The ecological monitoring work will be coordinated by a PMO, whose overall responsibility includes implementation of the project EMP. At the field level, the project will be implemented by nine PIUs in each of the project counties and districts. The PMO and PIUs will be assisted by a loan implementation consultant team. The ecological monitoring specialist will be a part of this team and will support the Hebi City Government (HCG), through the PMO and PIUs, to develop and implement a long-term ecological monitoring program for the Qihe River in Hebi City.

82. **Scope and Duration of Work.** This position could be a firm or an individual engaged by the PMO. It is an independent position. It is not part of the PMO in-house environmental team or the implementing agencies. The specialist will report to the PMO. The position is 28 person-months over the entire project duration (5 years). The specialist should be recruited as soon as possible after loan effectiveness, to enable an early start to ecological monitoring.

83. **Qualifications.** The specialist will have: (i) a master's degree and/or related discipline in ecology; (ii) at least 10 years applied experience in the design of ecological monitoring programs for flora and/or fauna, including statistical design and software programs, data entry, analysis, and reporting; (iii) applied research and management experience in biodiversity conservation, including expertise in at least one area of wetland ecology, e.g. fish, wetland vegetation, and/or waterbirds; and (iv) ideally, proficiency in spoken and written English.

84. **Tasks.** Working closely with the PMO and PIU environmental officers, design institutes, wetland ecologist and other loan implementation consultants, and other stakeholders as relevant, the specialist will do the following:

- (i) Clarify and establish the specific objectives of the long-term ecological monitoring program, including: (a) to measure the ecological health of the Qihe River in Hebi City; and (b) to measure progress of the project activities for wetland conservation and species protection in the pilot Qihe River NWP.
- (ii) Identify the specific variables to be monitored, which may include: (a) within the NWP – Wild Goldfish, Wild Soyabean, migratory waterbirds, wetland vegetation restored by the project; (b) Qihe River in the entire project area – water quality, hydrology.
- (iii) Describe existing HCG activities and arrangements for ecological and hydrological monitoring along the Qihe River, including within the NWP, including the locations of existing hydrological monitoring stations.
- (iv) For parameters which are already subject to some monitoring (e.g. water quality, hydrology), assess current strengths, weaknesses and opportunities. If existing arrangements are sufficient for the program objectives, assess and facilitate the integration of these into the program (or vice versa).
- (v) For new and/or existing parameters, develop the monitoring methods, frequency,

training needs, and equipment.

- (vi) Work with the wetland ecologist to identify and design the parameters for the NWP.
- (vii) Design the monitoring program and methods for each parameter to be: (a) as simple as possible; and (b) requiring as little specialist equipment as possible.
- (viii) Prepare field data collection template forms for each parameter.
- (ix) Prepare a series of specific, simple, and direct questions to be answered by the results of long-term monitoring. These will help guide implementing agencies to prepare progress reports based on the monitoring data.
- (x) Work with the HCG agencies that are developing the Qihe River Management Information System (MIS) to be established by the project, in order to: (a) ensure that data is collected in a format that can be entered into the MIS; and (b) develop simple pre-programmed questions or analyses to assist analyses and preparation of progress reports.
- (xi) Prepare a user manual which describes all steps in the program, including procedures for field monitoring of each parameter, specific agencies assigned to each task, roles and responsibilities, data collection, data entry to the MIS, data analyses, and the preparation of progress reports.
- (xii) Pilot the monitoring program with all relevant agencies, including data collection, entry, analyses, and reporting.
- (xiii) Support the implementation of at least the first six months of the monitoring program.
- (xiv) For all tasks, include stakeholder consultations as needed to ensure strong inter-agency support and participation for the program.
- (xv) Deliverables: (i) a final report, which includes (a) final draft long-term ecological monitoring program, (b) user manual, (c) description of all activities, lessons learned, and recommendation for follow-up.

85. **Timelines.** The program and user manual shall be completed within the first year of project implementation. This will give the specialist sufficient time to lead the piloting and at least first six months implementation of the program.

Wetland Ecologist

86. The wetland ecologist will be a part of this team and will support the PMO and PIUs to implement the project wetland activities, focusing on the pilot Qihe River NWP.

87. **Scope and Duration of Work.** This position could be a firm or an individual engaged by the PMO. It is an independent position. It is not part of the PMO in-house environmental team or the implementing agencies. The specialist will report to the PMO. The position is person-months over the entire project duration (5 years). The specialist should be recruited as soon as possible after loan effectiveness, as the first tasks include review of the detailed wetland designs.

88. **Qualifications.** The specialist will have: (i) a master's degree and/or equivalent experience in wetland ecology and management; (ii) at least 10 years work experience in wetland ecology, research, including wetland flora and/or fauna, wetland design, and the ecological impacts and management of river dredging and embankment; (iii) demonstrated experience in the preparation of wetland management plans; (iv) detailed knowledge and understanding of national regulations, policies, and requirements for wetland management in the PRC; and (v) ideally, proficiency in spoken and written English.

89. **Tasks.** Working closely with the PMO and PIU environmental officers, design institutes, other loan implementation consultants, river guards, and other stakeholders as relevant, the specialist will do the following.

Before construction:

- (i) Work with the design institutes to prepare the detailed project designs for the NWP, including: location, extent and design of the wetland habitats, management services, access roads, fencing, and signs; and, avoidance of sensitive sites.
- (ii) In particular, minimize the bank-side excavation for the establishment of deep pools and ensure the timing of this activity is restricted to the peak dry and time of lowest and slowest flows.
- (iii) Train the project agencies, including PMO and PIU Environment Officers, contractors, and construction supervision companies, on staff protocols while working in the wetlands (e.g. workers prohibited to catch wild animals, what to do if an injured animal is found etc.) as required by the EMP training plan.

During project implementation

- (iv) Provide hands-on support and on-the-job training to the PMO, forestry bureaus, river guards, and other relevant agencies for wetland management and monitoring for the NWP. The aim of the training is to enable these agencies to effectively manage the NWP and project facilities after project completion.
- (v) Conduct pre- and post-training capacity assessments (at the beginning and end of the project) to assess stakeholder capacity for wetland management.
- (vi) Prepare training topics and materials tailored to the capacity and needs of local agencies and the specific objectives for management of the NWP i.e. ecological conservation, restoration of wetland habitats, and sustainable use for recreation and public education.
- (vii) Facilitate the participatory establishment of a management agency for the NWP. This may include: assisting the relevant bureaus of the Hebi city government (HCG) to identify roles, tasks, and specific steps; drafting the roles and responsibilities of each agency; drafting the overall guiding charter for the management agency.
- (viii) Lead the preparation of the first five-year management plan for the NWP. This will be based on the NWP Master Plan (2011–2020) and describe, for the first five years: specific objectives; measurable (quantitative- and time-based) targets for capacity building, ecological values, tourism, and management; roles and responsibilities of all relevant stakeholders; operation and maintenance of facilities in the park, including the project-supported facilities; and financing arrangements for operation and maintenance.
- (ix) With the ecological monitoring specialist, develop specific wetland ecological targets for the NWP, including (but not limited to): recovery of the Wild Soy and Wild Goldfish populations; seasonal counts of migratory waterbirds; and, survival and health of the seven types of wetland habitats and vegetation restored by the project.
- (x) Identify the potential for: (a) expanding the role of the community river guards in management of the NWP; (b) new partnerships to support the NWP management, including with academic institutions in Henan Province or elsewhere.

- (xi) Circulate drafts of the management plan, organize and facilitate stakeholder consultation meetings to discuss the draft plan, and ensure that comments are addressed.
- (xii) Deliverables: (i) a final-draft five-year management plan for the NWP, which is ready for submission to the HCG for final review and official approval; (ii) a final report, describing the work of the specialist, lessons learned, and recommendation for follow-up.

90. **Timelines.** The final draft five-year management plan shall be submitted to the HCG no later than by the end of the second year of the project. This will give the specialist sufficient time to prepare the plan and remain working on the project while the plan is officially approved.

Package CS5 - Development of Qihe River Basin Management Information and Modeling Platform

91. This contract is proposed to be a single service delivery package using the ADB's QCBS procedure with an indicative budget of \$661,290. The aim of the technical assistance service is to achieve integrated management of the ecological environment and water resources in the Qihe River basin. The scope of the TA service will include:

- (i) Develop a management information system (MIS) and 3 dimensional watershed modelling platform for the Qihe River basin that includes various modelling features and capabilities to evaluate different management strategies and options for integrated management and protection of the Qihe River basin.
- (ii) This MIS and 3D Qihe River modelling platform will comprise a shared database that is linked across the bureaus of HCG involved in land and water resources management of the Qihe River. The central database will be housed at the Qihe River Ecological Conservation and Construction Management Office (QECO) of Hebi City. The MIS and river basin modelling system will be installed in each bureau office and linked by intranet, with defined user access, so that updates or new data entry made by a user will be reflected across the system.
- (iii) The CECO will be responsible for overall management and maintenance of the MIS and river basin modelling system, which will be used to support management of the Qihe River by each agency, including water quality and ecological monitoring, water resources management and flood forecast and warning. Development of the MIS and river basin modelling platform will require identification of appropriate software, tailored to the project needs, initial data entry (including layers for roads, topography, climate, location of water intake and discharge points), and training of users in data entry, maintenance protocol, and generating reports. A specialist consultant will be recruited to establish the system.
- (iv) Apply the Qihe River basin model to simulate and evaluate various river basin management options, including different options and scenario for ecological protection, non-point source pollution simulation, point-source pollution loading control, flood risk management, integrated water resources management, low impact development (LID) application, and receiving water quality improvement.
- (v) Develop a public-relation management platform using the 3D river basin modelling platform; and
- (vi) Develop a business management system platform using the 3D river basin modelling platform.

92. The key components and indicative budget for Package CS5 are listed in the tables below:

Table 11: Summary of Consulting Services Inputs for Qihe River Management Information and 3D Modelling System Development

Area of Expertise ^a		International (person-months)	National (person-months)
1	Team leader/deputy team leader: Integrated water resources management specialist	8	10
2	Environmental Management Specialist		4
3	Watershed management and modelling specialist		4
4	Water quality modelling Specialist		4
5	Computer software		8
6	Data base management specialist		8
7	GIS specialist		5
8	Flood risk management specialist		2
Total person-months		8	45

^a In addition some specialists will be engaged as resource persons to carry out specific training programs and events.

Source: Asian Development Bank estimates.

Table 12: Cost Estimates for the Management Information and 3D Modelling System Development (Contract Package CS5) (\$'000)

Item	Amount
1. Consultants	
Remuneration and per diem (incl. fees, International/domestic travel)	
i. International consultants	200.0
ii. National consultants	315.0
2. Survey and data collection	16.0
3. Transportation, travel	40.0
4. Software and equipment	80.0
7. Contingencies	10.0
Total	661.0

^a All cost estimates financed by ADB are inclusive of taxes and duties.

Source: Asian Development Bank estimates.

93. Details of terms of reference (TOR) will be developed by the project implementation support consultant for recruitment of consultants to carry out the consulting services in Package CS-5.

2. Reporting Requirements

94. All reports required for the consulting services contracts under the project must be prepared in both English and Chinese language. The PMO will decide on the number of copies of reports to be provided by the consultants to the PMO and will distribute reports to relevant PMG and Local Government agencies and an electronic copy of all reports in English language will be submitted to ADB.

Category	Schedule	Target Audiences
Inception report	Within one month after PMO issues the notice to proceed of Consulting service	PMO, ADB
Semiannual progress reports	During implementation period, semiannual (end of Jan and Jul)	PMO, ADB
Midterm report	Middle point of implementation	PMO/ADB
Project completion report	One month before ADB PCR mission	PMO/ADB
Annual environment monitoring	Annual (end of Jan)	PMO/ADB

Category	Schedule	Target Audiences
reports		
Semiannual external resettlement reports	Semiannual	PMO/ADB
Revisions to environmental monitoring plan	After preparation of the Detailed Engineering Design	PMO/ADB
Draft program for domestic and international study tours ^a	End of the first year	PMO/ADB
Reports for each capacity development activity	Two months after completion of activity	PMO/ADB
All training materials	After each lecture	PMO
All public education materials	After preparation	PMO

^a International study tours must comply with PRC regulations and guidelines.

Source: Asian Development Bank

Procurement Guidelines and Resources

Procurement Guidelines

<http://www.adb.org/documents/procurement-guidelines>

Project Learning Resources for the PRC

<http://www.adb.org/countries/prc/project-learning-resources>

Guidelines on Use of Consultants by ADB and Its Borrowers

<http://www.adb.org/documents/guidelines-use-consultants-asian-development-bank-and-its-borrowers>

Consulting Services Recruitment Notice:

<http://csr.adb.org>

Templates for engagement of consultants: (including submission templates)

<http://www.adb.org/site/business-opportunities/operational-procurement/consulting/documents>

Harmonized RFP (Loans)

<http://www.adb.org/site/business-opportunities/operational-procurement/consulting/documents>

Consulting Services Operations Manual

<http://www.adb.org/sites/default/files/institutional-document/31340/csom.pdf>

Procurement Documents:

<http://www.adb.org/site/business-opportunities/operational-procurement/goods-services/documents>

Guide on Bid Evaluation

<http://www.adb.org/documents/guide-bid-evaluation>

Procurement Plans

<http://www.adb.org/site/business-opportunities/operational-procurement/consulting-pp>

<http://www.adb.org/site/business-opportunities/operational-procurement/goods-services-pp>

Electronic Procurement

<http://www.mdbegp.org/www/eGPInteractiveus/tabid/69/language/en-US/Default.aspx>

Project Administration Instructions

<http://www.adb.org/documents/project-administration-instructions>

E-Handbook on Project Implementation

<http://www.adb.org/documents/handbook-project-implementation>

Anticorruption and Integrity

<http://www.adb.org/site/integrity/main>

How to report fraud and corruption

<http://www.adb.org/site/integrity/how-to-report-fraud-old>

VII. SAFEGUARDS

A. Environment

95. **Objectives.** The project is re-classified from Category A to B for environment since there is no impacts neither identified nor anticipated that are irreversible, diverse or unprecedented. An environmental impact assessment (EIA) and an environmental management plan (EMP) were prepared, and are consistent with the requirements set out in ADB's Safeguard Policy Statement (2009). The project EIA and EMP form the basis of the official loan agreement between ADB and the executing agency. The executing agency, through the PMO, holds final responsibility for implementation and compliance with the EMP. The EMP will be implemented in all phases of the project-design, pre-construction, construction, and operation. The EMP complies with the PRC's environmental laws and ADB's SPS. The EMP contains: (i) objectives; (ii) roles and responsibilities; (iii) mitigation measures; (iv) inspection, monitoring, and reporting arrangements; (v) training and institutional strengthening; (vi) GRM; (vii) future public consultation; and (viii) a feedback and adjustment mechanism.

96. In the design stage, the HP MO will pass the EMP to the design institutes for incorporating mitigation measures into the detailed designs. The EMP will be updated at the end of the detailed design, as needed. To ensure that bidders will respond to the EMP's provisions, the HP MO and local project implementation units (PIU) will prepare and provide the following specification clauses for incorporation into the bidding documents: (i) a list of environmental management requirements to be budgeted by the bidders in their proposals; (ii) environmental clauses for contractual terms and conditions; and (iii) component domestic EIAs, and project EIA including updated EMP for compliance.

97. **Climate change.** ADB's preliminary climate risk screening indicated the project was at a high risk from climate change. A climate risk vulnerability assessment was conducted to identify the threat that climate change presents to project viability, assuming a design life of 40–50 years. Modeling indicates that between 2020 and 2070, mean annual temperatures will rise, the risk of extreme climate events will increase, and variability in precipitation will increase, causing

more rainy or dry days. This could cause flood damage to the project embankments, channels, and pipelines, excessive sediment deposition in the lower Qihe River and canals and the need for more channel maintenance, and higher mortality or disease of the planted vegetation due to altered temperatures or water availability. To accommodate these risks, project structures have been designed to PRC flood protection standards and will be regularly maintained, embankments with a porous design have been selected, a flood warning system will be implemented, plant species for re-vegetation have been selected for suitability to the seasonally harsh climate and local soil conditions, and training will be given in IWRM and wetland management. As a result, flood control capacity will be improved from a 1-in-3 to 1-in-5 year recurrence interval for the project canals and the 1-in-20 year capacity for the Qihe River mainstream will be secured.

98. **Anticipated impacts and mitigation measures during construction.** Project works in the pilot NWP will cause temporary noise and visual disturbance which may result in disturbance to migratory and/or nesting waterbird communities, including storks, ducks and geese, minor damage to aquatic habitats, fish, and aquatic invertebrates due to elevated sediment levels, and small-scale flow diversions during works. The river rehabilitation works will involve the dredging of about 4.18 million cubic meters (m^3) of excavation (excluding dredged sediments) from the project canals and tributaries (widening and blockage removal along the channels) and embankments along the lower Qi. After use for back-fill, about 3.66 million m^3 of spoil will require disposal. This will be disposed in 26 disposal sites, which comprise trenches, farmland, and uncultivated land and shrubbery areas of low ecological value.

99. Dredging of waterways will produce about 85,232 m^3 dredged sediments from the four tributaries in Qi County and 18,050 m^3 from the five canals in Qibin District. The canals in Qibin District are small and narrow, and in the dry season, flows are minimal and slow ($<1 m^3/s$). Flow will be controlled by existing upstream sluice gates during dredging. Dredged sediment will be drained and used as soil supply for project component 1.1 (re-greening of barren hills). Solid waste (litter) will be transported to Caizhuang Landfill Site. Caizhuang Landfill is 10 km from the canals and has receiving capacity of 530 t/d, total capacity of 2.79 million m^3 , and remaining operational lifetime (at current rates of landfill) of about 13 years. For the four canals in Qi County, the estimated daily dredged amount will be 2,500 m^3 . This will be dried by belt dewatering machine then transported to Huangzhuang Quarry, east of Huangzhuang Village, Qi County. The quarry was formed in the 1990s to supply earth and gravel for road construction and is no longer used. The quarry comprises a large, deep pit. The dredged sediment will be disposed in this pit. The sediment quality is suitable for agriculture, and the site will be used by residents for agriculture after project completion.

100. For construction of the Qi County WWTP, solid waste transfer stations and installation of sewer and storm collection pipelines in Qi County and Qibin District, construction will result in temporary dust and noise disturbance to residents. Mitigation measures have been developed for all potential construction-related impacts and are included in the EMP. Overall the potential impacts are considered relatively low and manageable.

101. **Anticipated impacts and mitigation measures during operation phase.** Potential operational risks include: (i) impact of odor emissions from the Qi County WWTP to residents; (ii) cumulative effect on water quality in Zhejing canal due to the discharge of the treated wastewater; and (iii) inadequate maintenance of project facilities, including river embankments, due to insufficient capacity and/or operating budget. For odor impacts, a buffer zone distance of 100 meters (m) from the WWTP to the nearest residents has been established and complies with the PRC standard. For effluent quality, the Qi County WWTP will treat wastewater to Class

1A of the PRC's Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant, the highest possible standard, before discharge to Zhejing River. Effluent and surface water quality monitoring will be conducted by the local environment protection bureaus (EPBs). For maintenance of project facilities, roles and responsibilities for operation and maintenance have been largely defined. Embankments will be maintained by the river course management stations of the county/district Water Resources Bureaus, supported by riverguards, and the barren hills will be managed by the Qibin District Forestry Bureau. For the pilot NWP, the need to establish a management agency and management plan was identified during project preparation and has been included in the design. The project will provide training for agencies in the management and maintenance for all activities, especially wetland management in the NWP.

102. **EMP implementation responsibilities.** The responsibilities for environmental management and supervision during the various stages of implementation of the project are defined in the EMP. HCG (through PMO) and the implementing agencies (through the PIUs) will assume overall responsibility for implementing, supervising, monitoring and reporting on the EMP. The EMP implementation arrangements and responsibilities of governmental organizations are summarized below.

Table 13: Institutional Responsibilities for EMP implementation

Agency	Environmental Management Roles and Responsibilities
Executing Agency: HCG and the City PMO	<ul style="list-style-type: none"> • Coordination with city and county governments • Coordinate project preparation and implementation • Facilitate inter-agency coordination • Liaison with ADB • Supervise and manage project implementation • Daily management work in project preparation and implementation • Assign PMO environment officer and PMO social officer • Coordinate with ADB on project progress and monitoring reports • Submit bidding documents, bid evaluation reports, and other necessary documentations to ADB for necessary approval • Procure project implementation consulting services, including a LIEC • Consolidate environmental monitoring reports prepared by county PMOs and EMS and submit them to ADB for disclosure • Engage a procurement agency which supports the implementation agencies and five PIOs • Ensure that all bidding documents and contract include EMP requirements and make available sufficient budget to ensure effective implementation of the environmental safeguards.
Implementing Agencies: Qi County, Qibin District and Xun County	<ul style="list-style-type: none"> • Implement project components in their jurisdiction, including finance and administration, technical and procurement matters, monitoring and evaluation, and safeguard compliance • Coordinate with the PMO for project management and implementation • Establish environment management unit and appoint environment specialist as EMP coordinator • Incorporate EMP into bidding documents • Establish GRM • Supervise and monitor EMP implementation and annual reporting to the PMO (with support of LIEC) • Participate in capacity development and training programs • Construction supervision and quality control

Agency	Environmental Management Roles and Responsibilities
	<ul style="list-style-type: none"> • Contract local EMS to conduct environmental monitoring • Commission the constructed facilities
Project Facility Operators: PIUs	<ul style="list-style-type: none"> • With the implementing agencies, commission the constructed facilities • Operate and maintain completed facilities, including environmental management, monitoring, and reporting responsibilities

ADB = Asian Development Bank, EMP = environmental management plan, EMS = environmental monitoring stations, GRM = grievance redress mechanism, LIEC = loan implementation environment consultant, PIO = project implantation office, PMO = project management office

Source: Asian Development Bank.

103. **PMO environment officer.** The PMO will have main EMP coordination responsibility. A full time environmental officer has been assigned in the HPMO to coordinate implementation of the EMP. The officer will: (i) ensure that environmental management, monitoring, and mitigation measures are incorporated into bidding documents, construction contracts and operation management plans; (ii) coordinate the project level GRM; (iii) on behalf of PMO, prepare semiannual EMP monitoring and progress reports, for submission to ADB; (iv) coordinate the training and consultation plans defined in the EMP; (v) respond to any unforeseen adverse impacts beyond those mentioned in this EMP; and (vi) coordinate work with the PIU Environment Officers.

104. **PIU environment officers.** Each PIU will assign one full-time PIU Environment Officer to coordinate EMP at local level i.e. total of nine officers. These officers will: (i) implement the EMP at a day-to-day site level; (ii) coordinate the recruitment of construction supervision companies; (iii) act as local entry points to the GRM; (iv) report to the PIUs and PMO on EMP implementation progress; and (v) work closely with the PMO Environment and Social Officers to coordinate EMP work, including reporting and the GRM, across the project area.

105. **Loan implementation environment consultant.** A LIEC will be hired under the loan implementation consultant services. The LIEC will advise the PMO, PIUs, contractors, and construction supervision companies on all aspects of environmental management and monitoring for the project. The LIEC will (i) assist in updating the EMP and environmental monitoring program, as needed; (ii) supervise the implementation of the mitigation measures specified in the EMP; (iii) train the PMO and PIUs in how to prepare the semiannual EMP monitoring and progress reports to ADB and during the early stages of training, lead the preparation of these documents; (iv) provide training to the PMO, PIUs, and CSCs on the PRC's environmental laws, regulations and policies, ADB's SPS (2009), EMP implementation, and GRM in accordance with the training plan; (v) identify any environment-related implementation issues, and propose necessary corrective actions; and (vi) undertake site visits for EMP inspection as required.

106. **Construction Contractors and Construction Supervision Companies (CSCs).** Construction contractors will be responsible for implementing relevant EMP mitigation measures during construction, under the supervision of the CSCs and PIUs. Contractors will develop site-specific EMPs on the basis of this project EMP. CSCs will be selected through the PRC bidding procedure by the PIUs. The CSCs will be responsible for supervising construction progress and quality, and EMP implementation on construction sites. Each CSC shall have at least one environmental engineer on each construction site to: (i) supervise the contractor's EMP implementation performance; and (ii) prepare the contractor's environmental management performance section in monthly project progress reports submitted to the PIUs and PMO.

107. **Institutional strengthening, training.** To ensure effective implementation of the EMP, the capacity of PMO, PIUs, O&M Units, contractors, CSCs, and local bureaus (especially forestry and water resources) will be strengthened. The project will implement institutional capacity building, and training, as follows:

- (i) Appointment of PMO and PIU Environment Officers and Social Officers;
- (ii) Contracting of a wetland specialist and river specialist to support detailed design and implementation;
- (iii) Contracting of a LIEC to support the PMO and PIUs with EMP implementation and ensure compliance with ADB's Safeguard Policy Statement (2009); and,
- (iv) Implementation of a training program for all relevant agencies. Training will be facilitated by the loan implementation consultants, including the LIEC, wetland, and river specialists.

108. **Grievance redress mechanism.** A project-specific grievance redress mechanism (GRM) has been established to receive and manage any public environmental and/or social issues which may arise due to the project. This complements the PRC's national environmental complaint hotline (12369). The PMO and PIU Environment Officers and Social Officers will coordinate the GRM. All project agencies and staff will be trained in the GRM and will take an active role in supporting the GRM when necessary.

109. Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement.

B. Land Acquisition and Resettlement

110. **Introduction.** The project is classified as Category A in terms of involuntary resettlement and thus all resettlement plans and subsequent updates or new resettlement plans will need to be reviewed and cleared by ADB's Environment and Social Safeguards Division (SDS) in accordance with ADB's Safeguard Policy Statement (2009).

111. Since the detailed measurement surveys (DMSs) have not been conducted, the current resettlement plans are considered drafts and will have to be updated and these final resettlement plans will need to be resubmitted to ADB for approval. These updates will be based on the final designs, census of affected persons and inventory of losses (land and fixed assets). The project implementing agencies (Qibin District Government, Qi County Government, and Xun County Government) will re-endorse the final resettlement plans and re-disclose to affected villages. The construction contract for any civil works involving resettlement impacts will not be awarded until the relevant updated resettlement plan is approved by ADB.

112. **Scope of Resettlement Impacts.** In order to avoid or minimize the impacts of LAR, consultations were conducted with the local government departments, village committees and affected persons during the preparation of the resettlement plans. Based on the latest FSR, the Project will affect 70 villages in 16 towns, townships and sub-districts belonging to 1 district (Qibin District) and 2 counties (Qi County and Xun County) in the project area.

113. The project will require a total area of 4,433.10 *mu* of land to be permanently occupied, including acquisition of 1,174.23 *mu* collectively-owned of land, leasing of 1,959.28 *mu*

collectively-owned¹⁸ land, and occupation of 1,299.59 *mu* state-owned land. The project will temporarily occupy 1,557.68 *mu* of land in total, including 727.83 *mu* collectively-owned land and 829.85 *mu* of state-owned land. In addition, eight rural houses and two small businesses need to be demolished with a total area of 5,295.12 square meters (m²). The project will affect 739 households with 3,481 persons permanently and 515 households with 2,253 persons temporarily, totaling 1,254 households with 5,734 persons. The land loss is not significant for most households because losses are scattered across 70 villages in 16 towns or townships. Only 65 households with 283 people will be significantly affected. The project's resettlement impacts have been adequately assessed.

114. **Resettlement Policy Framework and Compensation Rates.** The objective of resettlement, according to both the PRC laws and regulations and ADB's SPS, is to achieve at least the same or better income, livelihood and living conditions. Based on consultations with the HCG, PMO, implementing agencies, PIUs, local government departments, and affected persons as well as the practical experiences in the project area, the following principles of resettlement are agreed for the project:

- (i) Avoid or minimize resettlement, wherever feasible;
- (ii) Compensation and entitlements provided to the affected persons will be adequate to at least maintain their "without project" standard of living, and have prospects of improvement;
- (iii) All affected persons will be provided with resettlement assistance and granted fair compensation based on their title status;
- (iv) Where post-requisition cultivated land per capita is not sufficient to maintain livelihood, compensation in cash or kind for replacement land for other income-generating activities will be provided for the affected persons;
- (v) All the affected persons will be adequately informed on eligibility, compensation rates and standards, livelihood and income restoration plans, project timing, and will be involved in the resettlement plan implementation process;
- (vi) No land requisition will take place unless replacement land or sufficient compensation for resettlement is given to the affected persons;
- (vii) HCG, PMO, PIUs and an independent/third party will monitor compensation and resettlement operations;
- (viii) Vulnerable groups will receive special assistance to ensure they are better off, so that the affected persons listed in the resettlement plan will have the opportunity to benefit from the project;
- (ix) Resettlement plans will be integrated with the overall city/district planning; and
- (x) The resettlement budget will adequately cover the full aspects of all compensation required.

115. The LAR compensation policies and standards will follow the Land Administration Law of the PRC (2004), Decision of the State Council on Deepening the Reform and Rigidly Enforcing Land Administration (SC [2004] No.28) (October 21, 2004), and other applicable guidelines. They will also be based on local policies regarding LAR in Henan Province, and ADB's SPS.

116. Compensation for acquisition of collectively-owned land includes land compensation, resettlement subsidy, young crop compensation and ground attachment compensation. As practice in project area, it's agreed that land compensation will be directly and fully paid to the

¹⁸ The non-civil works of Wetland Park will lease collective-owned land through land use rights transfer system.

households affected by land acquisition without any amount retained by the village committee or group. After compensation, no land will be redistributed in the village or group; if some affected households want to obtain ore land, this can be done through mutually agreed land transfer. Compensation for houses, young crops, trees and other associated facilities and impacts of temporary land occupation is directly paid to the affected persons.

117. Compensation for rural houses will be made according to the principle of full replacement cost. All the affected households opted to exchange their compensation entitlement for resettlement houses provided by local government at subsidized rates. The relocated households will also receive (i) subsidy for temporary housing during the 6 to 12 month transition period, (ii) moving allowance, and (iii) early moving reward. All compensation will be provided in full prior to LAR implementation.

118. All affected people are eligible to receive compensation and assistance. The cut-off date for certification of such entitlement will be disclosed to all the affected persons immediately after it is determined (usually on the date when the land acquisition announcement is published by the government according to the Land Administration Law). Announcements are expected by the end of 2015.

119. **Resettlement and rehabilitation measures.** An evaluation was conducted for the land losses of affected villager groups and households. The results show that most affected households are not significantly affected (i.e., loss more than 10% of their income source). For most, cash compensation will be adequate but for some the income restoration plan will be subject to further negotiation and discussion with the affected persons, with the findings and results included in the final resettlement plans.

120. In general, the income restoration options include:

- (i) **Agricultural resettlement actions.** This mainly include increasing land output through crop improvement and land improvement, continuing agricultural growing activities through land transfer;
- (ii) **Non-agricultural resettlement.** Surplus labor arising from land acquisition, in particular, the young and middle-aged laborers, will be resettled through labor transfer and reemployment. Affected persons who choose to run their own business will be provided with financial support in the form of micro-credit loan;
- (iii) Training of agricultural and non-agricultural skills to affected persons to enable them to develop various skills of making a living; and
- (iv) Endowment insurance provided to eligible farmers affected by land acquisition or rural-urban social welfare insurance. The affected persons who have been engaged in the urban-rural integrated pension program can increase their pay cost level after they receive the compensation of land acquisition, and once they get employed in the urban area, they are eligible to join in the urban worker pension program.

121. For house demolition and relocation, the eight affected households will receive compensation entitlements that can be exchanged to purchase the resettlement houses provided by local government at subsidized prices and convenient locations. The resettlement building will have five stories and include resettlement houses with four types, namely 65 m², 90 m², 120 m² and 150 m². The households affected by house demolition are eligible to purchase the resettlement area with the price of 420 CNY/m² for 30 m² per capita, and buy the extra area with the price of 600 CNY/m² for 10 m² per capita, as well as obtain store area with the cost

price of 1,200 CNY/m² for 10 m² per capita. The 2 affected small enterprises, including a chicken farm and brick factory on leased land from farmers, will be compensated based on appraised value and relocation assistance. The local government will also assist the owner to lease new land to continue its business.

122. **Resettlement budget and financing plan.** The initial LAR budget is estimated to be CNY120.075 million. The detailed budget of the resettlement fund will be updated upon the finalization of the compensation costs and project design, and included in the final resettlement plans. The resettlement fund will be financed and paid by the Qibin District Government, Qi County Government, and Xun County Government as a part of the total project investment. A compensation agreement will be negotiated and entered into with the village/community committees and the affected households during the LAR implementation. On this basis, the final cost will be further updated. The local governments have committed to timely implement the RPs, funded by counterpart funds.

123. **Institutional arrangements.** The HCG is the execution agency of the project and has established the Project Leading Group for ADB-loan Hebi Qihe River Environmental Improvement and Ecological Conservation Project (PLG) to be wholly responsible for comprehensive planning and decision-making for the project. The local governments in related counties and districts have already established their PLGs for the subcomponents in their administration zone.

124. The HCG and related local governments have designated ADB-loan PMOs in different levels to be responsible for project preparation and management. PMOs will be responsible for managing and coordinating the resettlement activities, including payment of compensation. To be specific, the Resettlement and Social Affairs Departments under PMOs will be specifically responsible for preparing and managing the implementation of resettlement plans, financial payment and internal monitoring. Delegated by PMOs, land management bureaus in the related district and counties will be responsible for the specific implementation of LAR, while the towns, townships, and villages in the project area will provide assistance in the preparation and implementation of resettlement plans.

125. To ensure smooth implementation, the staff in charge of LAR will undertake training on resettlement implementation organized by the Hebi PMO. A resettlement start-up consultant will provide training in ADB's policy requirements and will assist the implementing agencies to update and finalize their resettlement plans. The resettlement plans will be (i) updated based on the final design, detailed measurement survey and census of affected persons, (ii) disclosed to affected persons, and (iii) submitted to ADB for review and approval prior to the award of civil works contract and commencement of land acquisition or house demolition.

126. The resettlement implementation schedule has been prepared based on the preparation and construction timetable. The schedule is quite ambitious with LAR implementation starting in Q4 2016. This means:

- (i) The resettlement start-up consultant will need to be engaged by October 2015;
- (ii) The external resettlement monitor will need to be engaged by Q3 2016; and
- (iii) Considerable preparatory and implementation work will need to be carried out to ensure there is no delay to the planned construction schedules.

127. **Grievance Redress Mechanism.** A grievance redress mechanism (GRM) has been developed in compliance with ADB's SPS (2009) requirement to address environmental, health,

safety, and social concerns associated with project construction, operation, land acquisition, and leasing arrangements. The details of the GRM, including a time-bound flow chart of procedures, are included in the project EMP and resettlement plans; the complaint channels are slightly different for environmental and resettlement issues, but the PMOs will maintain and integrated system to document, follow-up and reports on all cases.

128. Persons affected by LAR, including land transfer, may file an appeal on any aspect of resettlement, including compensation rates, etc. The means of appeal, and the names, locations, persons responsible and telephone numbers of the appeal accepting agencies will be communicated to the affected persons at a meeting, through an announcement or the resettlement information booklet, so that the displaced persons know their right of appeal. Mass media will be used to strengthen publicity and reporting, and comments and suggestions on resettlement from all parties concerned will be shared by the resettlement organization. All agencies will accept grievances and appeals from the affected people for free, and costs so reasonably incurred will be disbursed from the contingency costs.

129. During the design and implementation periods of the project, these appeal procedures will remain effective to ensure that the affected people can use them to address relevant issues. Affected persons can also submit complaints to ADB which will first be handled by the project team. If an affected person is still not satisfied and believes he/she has been harmed due to non-compliance with ADB policy, s/he may submit a complaint to ADB's Accountability Mechanism.¹⁹

130. **Monitoring and Evaluation.** A detailed plan for both the internal and external monitoring is included in the resettlement plans. PMO will include a summary of internal monitoring in the quarterly project progress reports submitted to ADB. Furthermore, PMO will employ an external resettlement monitoring institute or firm to monitor and evaluate resettlement progress and results. A baseline survey for a sample of affected persons will be completed for each resettlement plan before the LAR begins (i.e., before the end of Feb 2016). After that and until project completion, semiannual monitoring reports will be prepared and submitted for ADB's review during resettlement implementation and annually for 2 years after completion of resettlement.

¹⁹ For further information, see: <http://www.adb.org/Accountability-Mechanism/default.asp>

Table 14: Summary of Resettlement Impacts by Component

Item		1.2 Qihe River Wetland Conservation and Rehabilitation	2.1 Qihe River Mainstream Watercourse Improvement in Qi County	2.2 Four Tributary Watercourse Improvement in Qi County	2.3 Five Canal Watercourse Improvement in Qibin District	3.1 Qibin District Wastewater Management	3.2 Qi County Wastewater and Solid Waste Management	Total	
Permanent land use (mu)	Collectively-owned land acquisition	285.75	166.70	220.53	412.90	0.00	58.35	1,174.23	
	Rural land transfer	1,959.28	0.00	0.00	0.00	0.00	0.00	1,959.28	
	State-owned land occupation	455.70	546.10	0.00	292.39	0.00	5.40	1,299.59	
	Total	2,700.73	712.80	220.53	705.29	0.00	63.75	4,433.10	
Temporary land use (mu)	Collectively-owned land	0.00	90.36	17.50	316.00	216.78	87.19	727.83	
	State-owned land	0.00	0.00	0.00	0.00	605.28	224.57	829.85	
	Total	0.00	90.36	17.50	316.00	822.06	311.76	1,557.68	
House demolition²⁰ (m²)		0.00	0.00	0.00	5,295.12	0.00	0.00	5,295.12	
Permanently affected population	Collective-owned land acquisition	AHs	44.00	25.00	148.00	126.00	0.00	23.00	366.00
		APs	225.00	123.00	594.00	579.00	0.00	98.00	1,619.00
	Rural land transfer	AHs	364.00	0.00	0.00	0.00	0.00	0.00	364.00
		APs	1,812.00	0.00	0.00	0.00	0.00	0.00	1,812.00
	State-owned land occupation	AHs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		APs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	House demolition	AHs	0.00	0.00	0.00	10.00	0.00	0.00	10.00
		APs	0.00	0.00	0.00	55.00	0.00	0.00	55.00
	Both LA and house demolition	AHs	0.00	0.00	0.00	1.00	0.00	0.00	1.00
		APs	0.00	0.00	0.00	5.00	0.00	0.00	5.00
		Sub-total	408.00	25.00	148.00	135.00	0.00	23.00	739.00
			2,037.00	123.00	594.00	629.00	0.00	98.00	3,481.00
Significantly affected²¹		13.00	1.00	18.00	13.00	0.00	20.00	65.00	
		66.00	5.00	76.00	55.00	0.00	81.00	283.00	
Temporarily affected population	Temporary land occupation	AHs	0.00	64.00	32.00	40.00	163.00	216.00	515.00
		APs	0.00	278.00	130.00	175.00	650.00	1,020.00	2,253.00
	Total Affected²²	408.00	89.00	180.00	175.00	163.00	239.00	1,254.00	
		2,037.00	401.00	724.00	774.00	650.00	1,118.00	5,734.00	

Source: Asian Development Bank estimates.

²⁰ Residential houses for 11 households and 5 small enterprises will be demolished.

²¹ Affected by HD or LA with income loss rate more than >10%.

²² No ethnic minorities will be affected by land acquisition and resettlement.

Table 15: Compensation Rates for Land Acquisition (CNY/mu)

Subcomponent	Compensation rate of LA (CNY/mu)	Affected Villages
1.2 Qihe River Wetland Conservation and Rehabilitation	38,000	Xiapang, Xugou and Luchang in Jinshan Sub-district
2.1 Qihe River Mainstream Watercourse Improvement in Qi County	31,500	Qiangongtang, Weilizhuang in Weixian Town
	33,000	Weixian Village in Weixian Town, Sanijiaotun in Xigang Town
	30,000	Qianfangcheng Village in Xinzhen Town, Yan, Zangkou, Shinaimiao Village in Xigang Town
	31,000	Dalizhuang, Dujie, Songjie, Fangzhai, Kangzhuang, Qinjie, Wolan, Xigang, Huangwangmiao, Hekou Village in Xigang Town
2.2 Four Tributary Watercourse Improvement in Qi County	46,000	Xiaguan Village in Zhaoge Town
	33,000	Xinzhuang Village in Beiyang Town
	31,000	Liuhe Village in Gaocun Town
	38,000	Zhaogou, Nihe, Guozhuang, Cuizhuang, Wuzhai Village in Qiaomeng sub-district; Side Village in Gaocun Town
2.3 Five Canal Watercourse Improvement in Qibin District	38,000	Cuizhuang Village in Jiuzhoulu Sub-district; Xiaoxinzhuang, Daxinzhuang, Taoyuan, Jiangzhuang, Niuzhuang in Changjianglu Sub-district
3.1 Qibin District Wastewater Management	31,500	Gongqiantang Village in Weixian Town
3.2 Qi County Wastewater and Solid Waste Management	46,000	Nanyangzhuang Village in Zhaoge Sub-district; Guanzhuang Village in Weidu Sub-district
	33,000	Xigang Village in Xigang Town; Xipeitun Village in Beiyang Town

Source: Asian Development Bank estimates.

Table 16: Compensation Rates for Rural House Demolition in Qibin District

Type of compensation	Type of house	Unit	Rate	Remarks	
House	Several stories house	Brick and concrete	CNY/m ²	470	1. The prices of the resettlement houses for the relocated households are as following: CNY420/m ² for the resettlement area (30 m ² per capita), CNY600/m ² for the extra area (10 m ² per capita), and CNY1,200/m ² for stores (10 m ² per capita, can be bought at the cost price) 2. In residential houses, the area of corridor will be calculated as the area of main house. The rate will increase CNY40/m ² along with the increasing of the wall thickness for every 12 cm.
		Brick and timber	CNY/m ²	400	
	One story house	Brick and concrete	CNY/m ²	420	
		Brick and timber	CNY/m ²	380	
Other compensation	Early moving reward	CNY/HH	10,000	Moving before the agreed demolition date	
	Subsidy of transition dwelling	CNY per capita for 1 year	2,000	The transition period shall not be longer than 1 year.	

Table 17: Budget of Resettlement Costs (CNY in '000)

No.	Item	1.2 Qihe River Wetland Conservation and Rehabilitation	2.1 Qihe River Mainstream Watercourse Improvement in Qi County	2.2 Four Tributary Watercourse Improvement in Qi County	2.3 Five Canal Watercourse Improvement in Qibin District	3.1 Qibin District Wastewater Management	3.2 Qi County Wastewater and Solid Waste Management	Total
1	Basic cost of resettlement	28,336.4	6,167.4	9,623.6	20,657.90	616.10	3039.80	68,441.20
1.1	Permanent land acquisition	11,046.2	5,412.7	9,023.0	17,153.00	0.00	2816.40	45,451.30
1.2	Rural land transfer (paid annually over 13 years)	17,058.1	0	0	0.00	0.00	0.00	17,058.10
1.3	State-owned land occupation	0	0	0	0.00	0.00	0.00	0.00
1.4	Temporary land use	0	162.6	33.4	64.80	501.30	209.30	971.40
1.5	Building demolition and relocation	0	0	0	2,442.90	0.00	0.00	2,442.90
1.6	Ground attachments	232.1	592.1	567.2	997.20	114.80	13.70	2,517.10
2	Resettlement planning (2% of Basic cost)	566.7	123.3	192.5	413.10	13.10	60.80	1,369.50
3	Staff Training cost (1.5% of Basic cost)	425.0	92.5	144.4	309.90	0.00	45.60	1,017.35
4	Taxes and fees related to land acquisition	10,184.7	5,817.0	9,678.8	9,960.50	9.90	2,602.60	38,253.50
5	Supporting fund for vulnerable groups (1% of Basic costs)	283.4	61.7	96.2	206.60	0.00	27.80	675.70
6	Contingencies (15% of Basic costs)	4,250.5	925.1	1,443.5	3,098.70	9.86	456.10	10,183.80
7	Total	44,046.8	13,187.0	21,179.0	34,646.70	782.45	6,232.60	120,074.60

Notes: 1. Subcomponent 1.1 does not involve land acquisition and resettlement; 2. The costs are estimated according to the draft resettlement plans, and will be updated along with the finalization of resettlement plans.

Source: Asian Development Bank estimates.

Table 18: Resettlement Implementation Schedule

No.	Task	Target	Agencies in charge	Time	Remarks
1	Information disclosure				
1.1	RIB	Affected people	PMO, HPRSAD	Sep. 2015	
1.2	Disclosure of the RP on ADB's website	Affected people	PMO, HPRSAD	Oct. 2015	
2	RP update and resettlement budget approval				
2.1	DMS	Affected area	HPRSAD	Dec. 2015	
2.2	Updating the RP based on the DMS	Affected area	Implementing agency, PMO	Jan. 2016	
2.3	RP and budget approval (compensation rates)	CNY120.075 million	QDG, QCG, XCG	Jan. 2016	
3	LA announcement				
3.1	Disclosing the updated RP	Affected area	HMG, PMO	Jan. 2016	
3.2	Releasing the LA announcement	Affected area	HMG	Feb. 2016	
4	Compensation agreement				
4.1	Entering into LA compensation agreements and paying compensation	Affected area	Implementing agency, village/ community committees	Mar. – Aug. 2016	
5	Livelihood restoration measures				
5.1	Payment of compensation for land acquisition, young crops and attachments	Affected area	Town governments	May 2016	
5.2	Implementation of restoration programs	Affected area	Town governments	Mar. 2016 – Dec. 2018	
5.3	Implementation of training program	Affected area	Labor and social security bureau	Mar. 2016 – Dec. 2018	
5.4	Implementing supporting measures for vulnerable groups	Affected area	Civil affairs bureau, PMO	Mar. 2016 – Dec. 2018	
5.5	Hiring affected persons under the Subproject	Affected area	PMO, labor and social security bureau, contractor	Mar. 2016 – Dec. 2018	
6	Capacity building of resettlement agencies				
6.1	Training of PMO staff	Staff	PMO	Nov. 2015	
6.2	Training of officials of sub-district offices	Staff	PMO, HPRSAD	Dec. 2015	
7	M&E				
7.1	Establishing an internal monitoring mechanism	As per the RP	PMO, HPRSAD	Jan. 2016	
7.2	Internal monitoring reporting	Quarterly	PMO	From Feb. 2016	
7.3	Appointing an external M&E agency	One	PMO	Jan. 2016	
7.4	Baseline survey	Affected area	External M&E agency	Feb. 2016	
7.5	External monitoring reporting	Semiannual	External M&E agency	Jun. 2016	1 st report (incl. baseline survey)
				Dec. 2016	2 nd report
				Jun. 2017	3 rd report
7.6	External evaluation reporting	Annual	External M&E agency	Jun. 2018	4 th report
				Jun. 2019	5 th report (post-evaluation)
7.7	Completion report		PMO, HPRSAD	Jun. 2020	

No.	Task	Target	Agencies in charge	Time	Remarks
8	Public consultation		HPRSAD	Ongoing	
9	Grievance redress		HPRSAD	Ongoing	
10	Disbursement of compensation fees				
10.1	- Disbursement to implementing agencies	Initial funds	QDG, QCG, XCG	Feb. 2016	
10.2	- Disbursement to town governments/sub-district office	Initial funds	PMOs	Mar. 2016	
10.3	- Disbursement to AHs	Initial funds	PMOs	End of May. 2016	
11	Commencement of civil construction				
11.1	Qihe River Upstream Ecological Protection	Implementing agencies and PMOs		Sep. 2016	
11.2	Qihe River Wetland Conservation and Rehabilitation			Oct. 2016	
11.3	Qihe River Mainstream Watercourse Improvement in Qi County			Nov. 2016	
11.4	Tributary Watercourse Improvement in Qi County			Jun. 2016	
11.5	Canal Watercourse Improvement in Qibin District			Jul. 2016	
11.6	Qibin District Wastewater Management			Jun. 2016	
11.7	Qi County Wastewater Management			Jun. 2016	

Note: There is little difference in planned schedules among different subcomponents, but detailed schedules are available in each resettlement plan and will be updated based on actual progress.

Source: Asian Development Bank estimates.

VIII. GENDER AND SOCIAL DIMENSIONS

131. A poverty and social assessment (PSA) was undertaken during the project preparation phase in accordance with ADB guidelines on gender and social dimensions. The PSA included a review of primary data, a household survey, focus group discussions and key informant interviews. The PSA assisted in the design of the various subcomponents to ensure they are social inclusive and implemented with a high degree of community participation, especially for the barren hills greening, the wetland rehabilitation and the solid waste management.

132. The project has opportunities to generate part-time and full-time employment during construction and operation, particularly for women and the poor. The project will also have public awareness campaigns to promote environmental protection. Communities can also play a proactive role in spreading awareness and monitoring project achievements, many of which depend upon changing peoples' behaviors, especially in villages. Based on the PSA, SDAP, GAP, stakeholder communication strategy (Annex 3), and consultation and participation plan (Annex 4) have been formulated and agreed by the PMO and implementing agencies. These actions will be implemented, progress will be monitored and achievement of results will be measured and reported. The following sections provide some further guidance for the implementing agencies.

A. Summary Poverty Reduction and Social Strategy

133. The project design includes a number of non-structural measures to support and ensure the sustainability of the new infrastructure for environmental protection, flood management, wastewater management and solid waste management. The project areas covers one district, two counties, 16 towns or townships, over 136 urban communities and villages, and will benefit an estimated 434,806 people including 138,499 (32.9%) urban residents and 296,307 (68.1%) rural residents. The average poverty incidence in the projects area is about 5%; the project components will benefit about 1,326 poor households located in 12 poverty villages (11 in Qibin

District and 1 in Qi County) and about 4,743 poor urban households in Qibin District and Qi County that currently received minimum living standard subsidies or pensions. For the subcomponents located in rural areas, they is good potential for women and the poor to participate in projects activities, because they have more spare time and seek income generation opportunities that are close to their villages.

134. The project will pose few adverse impacts, such as the construction disturbance and some LAR. These impacts have been adequately addressed in the EMP and resettlement plans. There are some potential risks which need to be mitigated, such as labor issues and communicable diseases, but these are considered as low risks because the local government has good policies and practices for labor standards and awareness on communicable disease. Nonetheless, the bidding documents include standard clauses for PIUs and project contractors to comply with the local regulations and to train their staff and contract workers so they are fully aware of such risks, local regulations and their entitlements.

135. The project has also conducted an affordability analysis for the provision of wastewater and solid waste services to urban and rural people. The analysis concluded that the connection fees and service tariffs are affordable for low income households and the very poor will receive subsidies to ensure universal access to improved sanitation. However, the willingness to pay in rural areas is still quite low, so awareness campaigns are planned to address this issue. Also, many households in the semi-urban areas do not have sanitation facilities that can be connected to the sewer network. So many households may continue to use pit latrines and discharge wastewater into the street, which will then be collected by the combined drainage and sewer mains.

B. Gender Action Plan

136. A GAP has been prepared to ensure this project is socially inclusive for women and measures are taken to proactive support gender mainstreaming. As concluded from the PSA, this project has many opportunities to not only benefit women but also to raise their status and role in environmental protection and improved sanitary condition that will benefit the entire community. Therefore, ADB has categorized this project as effective gender mainstreaming (EGM) in accordance with ADB's Policy on Gender and Development (1998) which adopted mainstreaming as a key strategy in promoting gender equity. Women can either be employed full-time or earn additional income through part-time employment in construction and operation activities. To achieve these gender mainstreaming, actions have been formulated which will be implemented by the PIUs and contractors. Details on proposed actions, target groups, implementing agencies, timing, funding source, and monitoring indicators, are included in the GAP.

137. The PIUs will be assisted by the social, gender and community participation consultant (10 person-month of intermittent inputs over 4 years) to (i) implement the GAP, (ii) improve the GAP as needed to ensure it is practical and effective, and (iii) to monitor and report on the progress of actions and the achievement or the results and targets. Reports will be prepared semiannually and will be appended to the project progress reports submitted to ADB. The gender targets have been included in the Design and Monitoring Framework (DMF) which ensure the gender actions are closely monitored as part of the PPMS. Also, implementation of the GAP to achieve targeted outcomes is included in the loan assurances.

GENDER ACTION PLAN

Objective / Activity	Target and Monitoring Indicators	Time Frame	Budget and Sources	Responsible Organization	Key Stakeholders
Output 1: Forests and Wetlands in the Upper Qihe River Basin restored					
1.1 Ensure local people's participation in the barren hills greening, wetland management and biodiversity conservation and rehabilitation by conducting training/public awareness and mobilization of local communities, schools, and community volunteers (cleaners, tour guides in the wetland park, students, etc.).	Number of communities, schools, volunteers, and local people participated in training and public awareness activities, including 50% female participants.	2016–2021	Budget included in the project	– HCG PMO and Local PMO (Qibin District) and implementing agencies (Forestry, Environment, Water Bureau)	– Local people in the affected villages (Qibin District) – Women/farmers
1.2 Ensure local employment in civil works and operations phase in barren hill greening, wetland management and rehabilitation targeting women: (i) Generate skilled and unskilled jobs at the construction (civil works) stage (ii) Generate skilled and unskilled jobs at the operation stage (iii) Ensure timely advertisement of employment opportunities (iv) Protection of labor rights and interests of employees, including equal pay to equal work between men and women	(i) 730 jobs generated, including at least 30% of employment are held by women in civil works/construction stage (ii) 90 jobs generated, including at least 40% of employment are held by women in barren hill greening and wetland management during implementation and operation (iii) Relevant gender-specific clauses on core labor standards are included in the bidding documents of all contracts (iv) Records of the number of laborers hired to particular positions disaggregated by sex. Wages paid to women and men by type of job	2016–2021	Included in the project's (civil works/contractors' budget)	– Consultants (social, gender and community devt. specialist) – Other agencies (Women Federation, Poverty Alleviation Office, Employment Bureau, etc.)	– Local government units (including village leaders) – Other stakeholders
Output 2: Flood Management Capacity of the Lower Qihe River Improved					
2.1 Ensure community participation in consultation and decision making processes in the Qihe River mainstream and watercourse improvement (flood control, river protection and ecological conservation) by conducting public awareness and training or seminar.	(i) Number people consulted during the detailed design phase, of which 40% are women (ii) Number of local people participated in public awareness activities, of which 50% are women	2016–2021	Budget included in the project	– HCG/PMO; Local PMO (Qi County and Qibin District); implementing agencies (Forestry, Water Bureau), and other agencies	– Local people in the affected villages (Qi County, affected villages) – Women; low income households
2.3 Ensure local employment in civil works and operations in Qihe River mainstream and watercourse improvement targeting women: (i) Generate skilled and unskilled jobs at the implementation and operation stage, and target women in the greening of river banks, hiring of river guards and related jobs (ii) Ensure timely advertisement of employment opportunities (iii) Protection of labor rights and interests of employees, including equal pay for equal works between men and women	(i) 1,470 jobs generated during the construction phase, and 77 jobs created during implementation and operation, including at least 40% jobs are held by women (ii) Relevant gender-specific clauses on core labor standards are included in the bidding documents of all contracts. (iii) Records of the number of labor force hired to particular positions disaggregated by sex, including wages paid to women and men by type of job	2016–2021	Budget included in the project (contractor's budget)	– Consultants (social, gender and community development specialist) – Other agencies (Women Federation, etc.)	– Local government units (including village leaders)
Output 3: Wastewater and Solid Waste Management in Qihe River Basin enhanced					
3.1 Ensure community participation in consultation and decision making processes in wastewater water and solid waste management,	(i) Number of people participated in consultation on design and operation, including at least 40% women participants	2016–2021	Budget included in the project	– HCG/PMO; Local PMO (Qi County, etc.); implementing	– Local people in the affected villages (Qi

Objective / Activity	Target and Monitoring Indicators	Time Frame	Budget and Sources	Responsible Organization	Key Stakeholders
through: (i) Consultation on the design and operation including solid waste/wastewater tariff (with consideration of households' willingness to pay and affordability) (ii) Training program/public awareness campaign on improved sanitation and solid waste management (iii) Solid waste management knowledge publicity leaflet (IEC materials)	(ii) Number of participants attending solid waste management awareness training, including at least 50% women (iii) Number of Leaflet /IEC materials on improved sanitation and solid waste management prepared, disseminated to 40,000 local residents			agencies - consultants (social, gender and community development specialist) - Other agencies	County, etc.; affected villages) - Women; low income households - Local government units (including village leaders)
3.2 Generate skilled and unskilled jobs to local people under the wastewater and solid waste management during the implementation stage (civil works) and operation (i.e., cleaners, garbage collectors, etc.). 3.3 Conduct capacity building relevant to solid waste management during operation stage	(i) A total of 864 jobs generated during the construction phase, and 173 jobs created during implementation and operation, at least 40% women (ii) 3.3. A total of 39 training programs conducted for 1,287 community volunteers/local people including at least 50% women during operation stage		Budget included in the project	- HCG/PMO; Local PMO (Qi County, etc.); implementing agencies - consultants (social, gender and community development specialist) - Other agencies	- Local people in the affected villages (Qi County, etc.; affected villages); - Women; low income households
Output 4: Institutional and technical support system for Integrated Management of the Qihe River Basin strengthened					
4.1 Provide gender awareness training for all PMO/implementing agency staff who will be involved in project implementation and operation on (a) ADB gender policies, (b) GAP implementation and monitoring, and (c) benefits from gender mainstreaming.	(i) All PMO/implementing agency staff are trained on relevant aspects. (ii) At least 40% of participants in all capacity building training activities are women.	2016 (prior to project implementation)	No additional cost on the project	- HCG/PMO; Local PMO (Qi County, etc.); implementing agencies - consultants (social, gender and community development specialist) - Other agencies	PMOs/PIUs Implementing agencies; other government agencies involved in project implementation and operation (i.e. Women Federation, Poverty Alleviation Office, etc.)
4.2 Hiring of two consultants (national social, gender and community development specialist) to assist the PMO/implementing agencies in implementing and monitoring the GAP and other social aspects.	(i) Two national social development/gender consultants are hired to support the PMO on relevant aspects.	2016–2021	Included in the Project	HCG; PMO	
4.3 Ensure MandE for the DMF, GAP, etc. includes collection of appropriate gender indicators.	(i) Sex-disaggregated data in project performance and monitoring indicators are included in progress reports. (ii) GAP progress updates are included in the quarterly progress reports.	2016–2021	Included in the project	PMO with the social, gender, and community development specialist	PMO (HCG) and local PMOs (Qibin District, Qi County); implementing agencies

DMF = design and monitoring framework, GAP = gender action plan, HCG = Hebi city government, IEC = information, education and communication, M&E = monitoring and evaluation, PIU = project implementation unit, PMO = project management office.

Source: Asian Development Bank.

C. Social Development Action Plan

138. Similar to the GAP, the SDAP (Annex 1) has been prepared to ensure this project is socially inclusive for the poor and other vulnerable groups (including children, the elderly and other groups) and that social risks are prevented or adequately mitigated. Based on the PSA results, actions have been formulated which will be implemented by the PIUs and contractors. Details on proposed actions, target groups, implementing agencies, timing, funding source, and monitoring indicators, are included in the SDAP.

139. The SDAP focuses on issues related to directly affected people, vulnerable people, and local social and agricultural development. The main actions can be grouped into three types: (i) for structure components in Outputs 1, 2 and 3, the project benefits enhancement measures such as employment promotion and social risks mitigation measures such as pro-poor activities will be within the direct control of the implementing agencies; (ii) for non-structure components, public awareness activities and campaigns will be organized in the subproject areas each year, being the responsibility of the HP MO, subproject PIUs and the implementing agencies; and (iii) for capacity building components in Output 4, training, meetings, consultations, case studies, workshops and seminars on decision making, ADB project management procedures, technical design and implementation, safeguard supervision and monitoring, implementation of LAR, public awareness and consultation capacity enhancement will be arranged by HP MO. There is also an activity to enable the Hui People in Nanguan Village in Xi County to contribute to public awareness and improved sanitation conditions.

140. The PIUs will be assisted by the social, gender and community participation consultant to (i) implement the SDAP, (ii) improve the SDAP as needed, and (iii) to monitor and report on the progress of actions and the achievement or the results. Reports will be prepared semiannually and will be appended to the project progress reports submitted to ADB. A combined social and gender report may be prepared. Implementation of the SDAP to achieve expected results is included in the loan assurances. The SDAP is provided in Annex 1.

141. Details on proposed actions, target groups, implementing agencies, timing, funding source, and monitoring indicators, are included in the SDAP and GAP.

Table 19: Project Beneficiaries by Project Output/Subcomponent

No.	Component	County/district	Town or Township	Villages/communities	Households	People
1	Forests and wetlands in the upper Qihe River basin restored					
1.1	Qihe River Upstream Ecological Protection	Qibin District	Jinshan, Shangyu, Dahejian	17	2,532	8,674
1.2	Qihe River Wetland Conservation and Rehabilitation	Qibin District	Jinshan, Gaocun, Miaokou, Shangyu	9	3,392	14,131
2	Flood management capacity of the lower Qihe River improved					
2.1	Qihe River main stream Watercourse Improvement (21 km)	Qi County and Xun County	Xigang, Xin, Weixian	35	14,158	57,324
2.2	Tributary watercourse improvement	Qi County	Chaoge, Beiyang, Gaocun, Xiang, Qiaomeng	39	16,798	65,612
2.3	Canal watercourse improvement	Qibin District	Jiuzhoulu, Changjianglu	8	5,160	18,702
3	Wastewater and solid waste management in the Qihe River Basin enhanced					
3.1	Qibin District wastewater	Qibin	Juqiao, Dalaidian,	16	9,818	38,403 ^a

No.	Component	County/ district	Town or Township	Villages/ communities	Households	People
	management	District	Jiuzhoulu			
3.2	Qi County wastewater management	Qi County	Chaoge, Weidu, Gaocun, Gucheng, Qiaomeng,	36	47,950	183,000 ^b
3.3	Solid waste management					
3.3.1	Construction of Urban 15 Solid Waste Transfer Stations and Associated Facilities	Qi County	Chaoge, Weidu	25	15,970	51,132
3.3.2	Rural solid waste management in Upper Qihe River	Qi County and Qibin District	Jinshan, Shangyu, Miaokou, Weidu	13	3,733	15,104
3.3.3	Rural solid waste management in Lower Qihe River	Qi County	Xingang	20	7,158	28,169
Total		3	16	143	113,844	434,806^c

^a The beneficiary in 2020 estimated in the FSR is 168,000.

^b The beneficiary in 2020 estimated in the FSR is 250,000.

^c There is the overlap of beneficiary among various sub-components. The total number has already excluded the overlap.

Source: Asian Development Bank estimates.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Project Design and Monitoring Framework

Impact the Project is Aligned with			
Ecosystem services in the Qihe River basin restored (Master Plan for Hebi City Qihe River Ecological Conservation for 2010–2020 and Hebi City Urban Flood and Waterlogging Control Plan for 2011–2020) ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<p>Outcome Integrated environmental management in the Qihe River basin in Hebi city demonstrated</p>	<p>By 2022:</p> <p>a. Total population in Hebi city benefiting from improved sewage system increased to 435,000 (2015 baseline: 270,000)</p> <p>b. Public satisfaction with water management and environmental management in Hebi increased to 35% (2015 baseline: 27%)</p> <p>c. Annual pollution loads in Qi county reduced: COD 3,285 tons, total nitrogen 383 tons, total phosphorus 49 tons (2015 baseline: COD 3,833 tons, total nitrogen 548 tons, total phosphorus 55 tons)</p>	<p>a. Hebi City Housing and Construction annual reports</p> <p>b-c. Annual survey reports conducted by the PMO</p>	<p>The HCG fails to adopt an integrated approach to managing the Qihe River basin.</p>
<p>Outputs</p> <p>1. Vegetation and wetlands in the upper Qihe River basin restored</p> <p>2. Flood management capacity of the lower Qihe River improved</p>	<p>By 2021 (2015 baseline: 0):</p> <p>1a. About 1,300 ha of degraded hills in the upper Qihe River watershed reforested</p> <p>1b. About 85 ha of wetland vegetation in the pilot Qihe River NWP restored</p> <p>1c. About 730 restoration-related local jobs during construction (at least 30% for women) and 90 local jobs during operation (at least 40% for women) created</p> <p>By 2021:</p> <p>2a. Riverbank stability enhanced at 14 locations along the lower Qihe River totaling about 4 km (2015 baseline: 0)</p> <p>2b. Flood management capacity of a combined 30 km of canals in Qi county and Qibin district improved to 1-in-5 year capacity (2015 baseline: 1-in-3 year capacity)</p> <p>2c. About 11.5 km of riverside revegetation in Qi county and about 11.3 km in Qibin district completed (2015 baseline: 0)</p> <p>2d. For canal rehabilitation, 1,470 local jobs during construction and 77 local jobs during operation created,</p>	<p>1a–c. Annual project technical and progress reports and annual loan review missions</p> <p>2a–d. Annual project technical and progress reports and annual loan review missions</p>	<p>Climate variability adversely affects success of vegetation restoration.</p>

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	at least 40% for women (2015 baseline: 0)		
3. Wastewater and solid-waste management in the Qihe River basin enhanced	<p>By 2021 (2015 baseline: 0):</p> <p>3a. About 81.53 km of storm water pipelines in Qibin district and 132.49 km in Qi county constructed</p> <p>3b. About 90.33 km of sanitary sewers in Qibin district and 69.12 km in Qi county constructed</p> <p>3c. Expansion works of Qi county WWTP to 60,000 m³/day completed (2015 baseline: 30,000 m³/day)</p> <p>3d. About 15 domestic solid-waste transfer stations in Qi county constructed</p> <p>3e. Solid-waste management works and equipment in 33 rural villages completed</p> <p>3f. For storm water and sanitary pipelines and WWTP, 864 local jobs during construction and 173 local jobs during operation created, at least 40% for women</p>	3a–f. Annual project technical and progress reports and annual loan review missions	There is a lack of clear direction from the national government on wastewater tariff adjustments, which limits financial sustainability and strains the budget.
4. Institutional and technical support system and capacity for integrated management of the Qihe River basin strengthened	<p>By 2021 (2015 baseline: 0):</p> <p>4a. At least 30 people, including HCG staff and residents, trained for project management, and O&M of constructed or improved facilities</p> <p>4b. Qihe River ecological monitoring program implemented from 2017 in accordance with specified sampling locations, timing, and frequency</p> <p>4c. Qihe River basin management information system fully functioning and producing monitoring data within the QECO from 2020</p> <p>4d. 39 community environmental monitoring teams mobilized and functioning with clear job descriptions from 2017 to support domestic solid-waste management along the Qihe River and its tributaries</p> <p>4e. All staff of PMO and implementation agencies trained on safeguard policy and gender mainstreaming (participants disaggregated by sex)</p>	4a–e. Annual project technical and progress reports and annual loan review missions	
Key Activities with Milestones			
1. Vegetation and wetlands in the upper Qihe River basin restored			
1.1 Undertake land acquisition and resettlement activities (Q2–Q4 2016)			
1.2 Plant trees, shrubs, and/or grass on approximately 1,300 ha of degraded hills in the upper Qihe River watershed			

(Q4 2016–Q2 2020)

- 1.3 Restore and create habitat areas in the pilot NWP (Q4 2016–Q4 2018)
- 1.4 Upgrade existing roads and construct new roads and/or paths for wetland management and tourism in the pilot NWP (Q4 2016–Q3 2020)
- 1.5 Construct facilities in the pilot NWP for research, monitoring, management, and service (Q4 2016–Q3 2020)
- 2. Flood management capacity of the lower Qihe River improved**
- 2.1 Undertake land acquisition and resettlement activities (Q2–Q4 2016)
- 2.2 Reinforce riverbank stability with gabion works and slope protection along the lower Qihe River (Q1 2017–Q4 2020)
- 2.3 Pave dike crest road over a 21 km section of the lower Qihe River (Q1 2017–Q4 2020)
- 2.4 Carry out four tributary watercourse improvement works in Qi county (Q4 2016–Q2 2019)
- 2.5 Carry out riverside greening in Qi county along the Side River and Zhaojia canals (Q4 2016–Q2 2019)
- 2.6 Carry out watercourse improvement works on three canals (Tianlai, Mianfeng, and Erzhi canals) in Qibin district (Q4 2016–Q3 2018)
- 2.7 Reconstruct two canals (Sanzhi and Sizhi canals) in Qibin district (Q2 2017–Q1 2019)
- 2.8 Carry out riverside greening in Qibin district along the Tianlai, Mianfeng, and Erzhi canals and along the Shanzhi and Sizhi canals (Q4 2017–Q2 2019)
- 3. Wastewater and solid-waste management in the Qihe River basin enhanced**
- 3.1 Undertake land acquisition and resettlement activities (Q2–Q4 2016)
- 3.2 Construct sanitary and storm water pipelines in Qi county (Q3 2016–Q1 2021)
- 3.3 Construct sanitary and storm water pipelines in Qibin district (Q1 2017–Q1 2021)
- 3.4 Expand the capacity of the Qi county WWTP (Q3 2016–Q3 2018)
- 3.5 Construct about 15 urban domestic solid-waste transfer stations with associated facilities in Qi county (Q3 2016–Q1 2019)
- 3.6 Improve rural domestic solid-waste management in approximately 33 villages along the Qihe River (Q3 2016–Q1 2018) (G/CD)
- 3.7 Implement a pilot community-led solid-waste management system that will raise awareness and improve waste collection in both rural and urban areas of Qi county and Qibin district (Q3 2016–Q3 2020) (GE, G/CD)
- 3.8 Conduct domestic study tours for capacity building of relevant agencies and support the development of a better solid-waste management system (Q3 2016–Q4 2018) (GE, G/CD)
- 4. Institutional and technical support system for integrated management of the Qihe River basin strengthened**
- 4.1 Establish and implement a Qihe River ecological and hydrological monitoring program (Q4 2016–Q2 2021)
- 4.2 Develop a Qihe River basin management information system (Q4 2016–Q4 2020)
- 4.3 Conduct capacity development and training of Hebi PMO and implementation agency staff in ADB project management procedures, technical design and implementation, and safeguard supervision and monitoring during Q3 2016–Q3 2021 (GE, G/CD)

Project Management Activities

Support final project design and implementation (Q1 2016–Q4 2021) (G/CD)

Provide overall project implementation support for the Hebi PMO and implementation agency staff, including implementation of land acquisition and resettlement (Q1 2016–Q4 2021) (G/CD)

Carry out key activities of the gender action plan and the social development action plan (Q3 2016–Q4 2021) (GE)

Implement and monitor the resettlement plan and the environmental management plan (Q3 2016–Q4 2021)

Prepare knowledge product documenting key lessons learned in integrated environmental management and restoration of the Qihe River (Q2 2021–Q4 2021)

Inputs

ADB loan: \$150,000,000

Government: \$175,400,000

Assumptions for Partner Financing

Not applicable.

ADB = Asian Development Bank, COD = chemical oxygen demand, G/CD = governance and capacity development, GE = gender equity, ha = hectare, HCG = Hebi city government, km = kilometer, m³ = cubic meter, NWP = national wetland park, O&M = operation and maintenance, PMO = project management office, Q = quarter, QECO = Qihe River Ecological Conservation and Construction Office, WWTP = wastewater treatment plant.

^a Ecosystem services are the direct and indirect contributions of ecosystems to human well-being. They support directly or indirectly our survival and quality of life. <http://biodiversity.europa.eu/topics/ecosystem-services>. Hebi City Government. 2010. *Master Plan for Hebi City Qihe River Ecological Conservation for 2010–2020*. Hebi; and Hebi City Government. 2010. *Hebi City Urban Flood and Waterlogging Control Plan for 2011–2020*. Hebi.

Source: ADB estimates.

B. Monitoring

1. Project Performance Monitoring

142. At the beginning of the project implementation stage, the Hebi PMO will develop a project performance management system (PPMS) to monitor the progress of the project in achieving the planned outcome and outputs. The PPMS will be developed with assistance of the project implementation management consultant as one of its work tasks in accordance with ADB's policy requirements, including baseline setting, operational data collection, data analysis, and reporting.

143. The PPMS will adopt indicators relating to the following aspects of the project: (i) physical progress of subproject implementation; (ii) financial progress, (ii) improvement in ecological conditions of the upper Qihe River basin, (iii) improvement in lower Qihe River and tributary watercourses; (iv) improvement in wastewater collection and treatment in Qibin District and Qi County; (v) improvement in rural and urban solid waste management in Qibin District and Qi County; (vi) Results of capacity development program; and (vii) social and poverty development. The PMO will assign staff, or contract consultants, to collect baseline and progress data at the requisite time intervals to be used in the PPMS. The PMO will be responsible for analyzing and consolidating reported data, and reporting outcomes to ADB through semiannual progress reports.

2. Compliance Monitoring

144. During project implementation, ADB and the PMO will closely monitor the compliance of all the covenants under the project and will take necessary remedial actions for any noncompliance. The compliance status will be reported in the semiannual progress report by the PMO and will be reviewed during project review missions.

3. Legal Covenants

145. HCG shall ensure that in the event of (i) any change in ownership or control of the project facilities; or (ii) any sale, transfer, or assignment of the shares of PIUs is anticipated, HCG will consult with ADB at least 6 months prior to the implementation of such change. HCG shall cause PIUs to further ensure that such changes are carried out in a lawful and transparent manner.

4. Financial Covenants

146. **Counterpart funding.** The TA will request HCG to provide the details of the sources of the counterpart funding as well as provide corresponding commitment letters. The total cost includes physical and price contingencies, interest during construction.

147. **Financial management.** The HCG shall establish and maintain sound financial management systems in accordance with ADB's Guidelines on the Financial Management and Analysis of Projects, including the establishment of separate project accounts and the maintenance of minimum balances to ensure smooth cash flow and the timely settlement of project construction liabilities and future debt servicing.

5. Governance and anticorruption

148. ADB's Anticorruption Policy (1998, as amended to date) were explained to and discussed with the HCG and implementing agencies. Specific policy requirements and supplementary measures will be described in the project administration manual.

6. Safeguards monitoring

a) Environment

149. The project monitoring program focuses on the environment in the project areas of influence in the project counties and districts. The environmental monitoring program is in Table EMP-4 of the project EMP, including parameters, time and frequency, implementing and supervising agencies, and estimated costs. Three types of project environmental monitoring will be conducted under the EMP: (i) internal monitoring and supervision and reporting by CSCs and PIUs; (ii) EMP implementation monitoring and progress reporting by the LIEC; and (iii) compliance monitoring by local EMS. The monitoring program covers the scope of monitoring, parameters, time and frequency, implementing and supervising agencies, and estimated costs. Monitoring shall comply with the relevant national standards.

150. **Internal monitoring and supervision and reporting by CSCs.** During construction, the CSCs and PIUs will be responsible for conducting internal environmental monitoring in accordance with the monitoring and reporting plans. Supervision results will be reported through the CSC reports to the PIUs.

151. **EMP implementation monitoring and progress reporting.** The LIEC will review project progress and compliance with the EMP based on field visits, and the review of the environmental monitoring conducted by the EMS. The findings of the LIEC will be reported to ADB through the semiannual EMP monitoring and progress reports. The reports will include (i) progress made in EMP implementation, (ii) overall effectiveness of the EMP implementation (including public and occupational health and safety), (iii) environmental monitoring and compliance, (iv) institutional strengthening and training, (v) public consultation (including GRM), and (vi) any problems encountered during construction and operation, and the relevant corrective actions undertaken. The LIEC will help PMO prepare the reports and submit the English report to ADB for appraisal and disclosure.

152. **Environmental compliance monitoring by local EMS.** The PIUs in each county or district will contract the local EMS to conduct environmental monitoring in accordance with the monitoring program. A detailed cost estimate will be provided by the EMS prior to implementation. Monitoring will be conducted during construction and operation period, until a project completion report (PCR) is issued. Semiannual monitoring reports will be prepared by the EMSs and submitted to PMO and the PIUs.

153. **Quality assurance (QA) /quality control (QC) for compliance monitoring.** To ensure accuracy of the monitoring, the QA/QC procedures will be conducted in accordance with the following regulations:

- (i) Regulations of QA/AC Management for Environmental Monitoring issued by the State Environmental Protection Administration in July 2006;
- (ii) QA/QC Manual for Environmental Water Monitoring (Second edition), published by the State Environmental Monitoring Centre in 2001; and

- (iii) QA/QC Manual for Environmental Air Monitoring published by the State Environmental Monitoring Centre in 2001.

154. **Project completion environmental audits.** Upon completion of each subproject, environmental acceptance monitoring and audit reports shall be (i) prepared by a licensed environmental monitoring institute in accordance with the PRC's Guideline on Project Completion Environmental Audit (2001), (ii) reviewed for approval by the environmental authorities, and (iii) reported to ADB through the semiannual progress reports. Subproject completion reports shall be finalized within 3 months after each subproject completion, or no later than 1 year with permission of the local environment protection bureaus.

b) Land Acquisition and Resettlement

155. The PMO will submit an internal monitoring report semiannually to ADB. Furthermore, the PMO will employ an external resettlement monitoring institute or firm to establish an independent external monitoring organization in order to deliver a truly independent and unbiased external monitoring report. Internal and external monitoring of resettlement plan implementation will be conducted. Monitoring methodologies are specified in the resettlement plans. A detailed plan for both the internal and external monitoring and evaluation (M&E) is included in the resettlement plans. The PPMS included indicators on resettlement plan monitoring, and the required frequencies.

156. An external monitoring agency acceptable to ADB will be engaged by January 2016 prior to commencement of land acquisition. The external monitoring agency will prepare a baseline study, and implement external monitoring and evaluation of resettlement plan implementation. Semiannual external monitoring reports will be prepared and submitted to ADB during resettlement plan implementation, and annual evaluation reports will be forwarded directly to both the PMO and ADB for 2 years after conclusion of resettlement plan implementation.

7. Gender and Social Dimensions Monitoring

a) Gender Action Plan monitoring

157. Monitoring and evaluation of the gender action plan will be incorporated into the overall monitoring and evaluation plan for the project. Monitoring indicators for the GAP and SDAP were incorporated into the PPMS. The implementing agencies will be responsible for establishing and coordinating regular monitoring and evaluation.

158. ADB staff with expertise in gender issues will participate in the midterm review. The social and gender development expert will work with PMO and implementing agency staff to create a detailed implementation and monitoring plan for each of the tasks outlined, help to complete the first gender action plan implementation progress report, and review the second report prepared by the implementing agencies. The firm or institute which engaged to as the independent external resettlement and social monitor will review and provide guidance on the semiannual implementation progress reports.

159. The regular project progress reports to ADB will include, at least semiannually, reporting on those indicators. Assistance will be provided for the executing agency and implementing agencies by the resettlement and social development consultant who will help to set up effective monitoring systems and work with the focal points and implementing agencies to ensure implementation of the GAP, and SDAP. The project's social, gender and community participation specialist will assist the PMO to collect data for qualitative analysis to assess the

effectiveness of the GAP benefiting women beneficiaries at the project end. This will include an end-of-project survey of a small number of sample beneficiaries and/or focus group discussions (FGDs) with female beneficiaries to obtain qualitative information on the improvements to women's lives as a result of the project. Questions could include - Has your income improved? What did you do with the increased funds you received? How has your life improved? Have there been strategic changes in your community or household relationships e.g., respect from your husband? Mother in-law etc.?

b) Social Development Action Plan Monitoring

160. It is proposed that comprehensive monitoring be conducted during project construction to ensure that the project fulfils its aims and objectives. The HPMO will be responsible for the monitoring and evaluation, and for reporting SDAP progress and achievements to ADB during project implementation. The SDAP monitoring report will be part of the project progress report. The social and gender specialist will support the HPMO to prepare the monitoring and evaluation report.

C. Evaluation

161. In addition to regular monitoring, project performance will be reviewed at least once a year jointly by ADB and HCG. The review will assess implementation performance and achievement of project outcomes and outputs, assess financial progress, identify issues and constraints affecting implementation, and work out a time-bound action plan for their resolution. ADB and HCG will undertake a midterm review to assess implementation status and take appropriate measures - including modification of scope and implementation arrangements, and reallocation of loan proceeds, as appropriate - to achieve the project impact and outcome. Within 3 months of physical completion of the project, HCG will submit a project completion report to ADB.

D. Reporting

162. HCG will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure projects continue to be both viable and sustainable, project accounts and the executing agency AFSs, together with the associated auditor's report, should be adequately reviewed.

163. Within 6 months after project completion, the PMO will prepare, in coordination with the PIUs and HCG, and submit to ADB a PCR evaluating the performance of the PMO and PIUs; and summarizing the loan funds utilization, project implementation, attainment of project impact, outcome, and outputs, implementation experience, project performance, actual costs incurred, benefits, and other information requested by ADB, and assessing the accomplishment of the purposes of the loan.

E. Stakeholder Communication Strategy

164. Relevant project information, including implementation progress, will be disclosed in the ADB website and at the PMO. This may include the design and monitoring framework, the

environmental assessment, and the EMP. Stakeholder workshops will be held throughout project implementation to encourage key stakeholders, particularly workers and residents in project areas, to participate in achieving the project benefits and to make sure all stakeholders, including women, poor and other vulnerable groups, benefit from the project.

165. A Stakeholder Communication Strategy (SCS) has been prepared as required by ADB to ensure inclusiveness, transparency, and meaningful participation of concerned stakeholders for the Henan Hebi River Environmental Improvement and Ecological Conservation Project. It provides an agreed communication platform for key stakeholders particularly between the project's affected groups and the executing and implementing agencies; ensure that the stakeholders' views and interests are fully integrated into the project design, implementation and operation. Specifically, the SCS could help in ensuring a regular flow of reliable project information and inclusion of vulnerable groups in the distribution of project benefits during project implementation and operation. The community communication strategy matrix outlines and/or identifies key messages, means of communication, and timeline of delivery for various stakeholders during the project cycle. The SCS is provided in Annex 3.

166. A Consultation and Participation Plan (C&PP) has been prepared for the concerned stakeholders within the project areas as required by ADB to ensure social inclusion. The purpose of this plan is to engage the stakeholders in meaningful consultation and decision-making process; inform them about the project and consult them on various issues relevant to the project/subcomponents and activities during project design and implementation. Consultation and participation serve venue for the key stakeholders (i.e., government agencies, project beneficiaries, women, etc.) to be informed about the project, clarify and express feedbacks, issues and concerns, and suggestion; learn how they will be benefited by the projects; participate in decision-making and take action and/or be involved during the design, project implementation and operation/maintenance stages. The C&PP is provided in Annex 4.

X. ANTICORRUPTION POLICY

167. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy (1998, as amended to date) relating to the project. All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.²³

168. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the project.

XI. ACCOUNTABILITY MECHANISM

169. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability

²³ ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.²⁴

XII. RECORD OF PAM CHANGES

170. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

²⁴ Accountability Mechanism. Available at: <http://www.adb.org/Accountability-Mechanism/default.asp>.

SOCIAL DEVELOPMENT ACTION PLAN

Proposed Actions	Target Indicators	Agencies/ Persons Responsible	Time Frame	Funding Source	Monitoring Tools/ Indicators
<p>1. Community consultation and participation in subproject design and implementation.</p> <p>1.1 Conduct consultations with the local people in the affected communities/villages and engage them in design of project components targeting community participation.¹</p> <p>1.2 Provide information and capacity support to local people including women, low income HHs during construction / civil works during implementation and operation stages.</p>	<p>(i) Consultation meetings are organized (at least 40% women participants) on subproject designs.</p> <p>(ii) Public consultation activities conducted (including 50% female participation) on implementation of relevant components (solid waste management, wetland management and rehabilitation, flood control and greening of riverbanks, barren hills greening, etc.).</p> <p>(iii) Leaflet/consultation materials on relevant components (solid waste management/ improved sanitation, wetland management, etc.) prepared and disseminated to the local people and communities.</p>	<p>HCG PMO and Local PMOs (Qiben District, Qi County) and IAs (Forestry, Environment, Water Bureau)</p> <p>-Consultants (social, gender and community development specialist)</p> <p>-other agencies (Women Federation, Poverty Alleviation Office, Employment Bureau, etc.);</p> <p>-Contractors</p>	2016-2021	Included in project costs	<p>Quarterly Progress Report;</p> <p>Semiannual and Annual Report</p> <p>Include sex disaggregated data in the reports.</p>
<p>2. Ensure local employment during construction and operation of relevant subcomponents, giving a priority to the poor, women, and vulnerable groups.</p> <p>(i) Provide skilled and unskilled</p>	<p>(i) Number and percentage of project beneficiaries trained on appropriate skills.</p> <p>(ii) 730 jobs generated, including at least 30% of employment are held by women in civil works / construction stage</p> <p>(iii) 90 jobs generated, including at least 40%</p>	<p>HCG PMO and Local PMOs (Qiben District, Qi County) and IAs</p> <p>-Contractors;</p> <p>-Consultants (social, gender and community</p>	2016-2021	Included in project costs	<p>Monthly monitoring form for labor force</p> <p>Quarterly Progress Report;</p> <p>Semiannual and Annual Report</p>

¹ Community participation for the “Henan Hebi Qihe River Environmental Improvement and Ecological Conservation Project” will be implemented in the following outputs and subcomponents: **Output 1: Ecological Conservation** (Qihe River upstream ecological protection, i.e. barren hill greening; Qihe River Wetland Conservation and Rehabilitation, during implementation and operation stages; **Output 2: Qihe River Mainstream and Tributary Watercourse Improvement in Qi County and Qibin District** (greening of riverbanks, and civil works during implementation stage); **Output 3: Wastewater and Solid Waste Management** (in Qibin District and Qi County); and **Output 4: Institutional Strengthening and Capacity Development** (under public participation and environmental management mechanism development). Separate budget has been allocated specifically for the implementation of community participation. Specific areas where the local people/communities will be engaged during project implementation and operation stage include the following; (i) consultation and decision-making processes during the detailed design stage / project cycle; (b) meetings/public consultations/meetings; (iii) public awareness campaigns and training; (iv) capacity building, hiring local people including women, low income HHs, APs/HHs during implementation and operation, and mobilization of community volunteers (i.e., cleaners, river guards, tour guides in the wetland park, garbage collectors, etc.).

Proposed Actions	Target Indicators	Agencies/ Persons Responsible	Time Frame	Funding Source	Monitoring Tools/ Indicators
<p>jobs during project construction</p> <p>(ii) Provide jobs at the operation stage;</p> <p>(iii) Ensure timely advertisement of employment opportunities; ensure that employment preference will be given to the local people including the APs, women, and low income households.</p>	<p>of employment are held by women in barren hill greening and wetland management during implementation and operation.</p> <p>(iv) Records of the job advertisements and number of laborers hired to particular positions disaggregated by sex. Wages paid to women and men by type of job</p>	<p>development specialist)</p> <p>-other agencies (Women Federation, Poverty Alleviation Office, Employment Bureau, etc.);</p>			<p>Include sex disaggregated data in the reports.</p>
<p>3. Labor Force Safety in Construction Work, Operation and Maintenance Jobs.</p> <p>3.1 Ensure implementation of the core labor standards (i.e. Equal pay for equal work, no child labor, occupation and health safety, etc.) by providing training to the contractors and the labor force, and ensure safety guidelines are incorporated in the contracts.</p> <p>3.2 Conduct training for the contractors and labor force and PMO/IAs on gender mainstreaming and HIV/AIDS prevention during project implementation stage.</p>	<p>(i) A clause included in the bidding documents on the contractors' implementation of the core labor standards (i.e., equal pay for equal work, no child labor and equal opportunities in employment for men and women, occupation and health safety).</p> <p>(ii) Number of local people trained and labor force hired by the contractors (disaggregated by sex).</p> <p>(iii) Number of participants attending the training on gender mainstreaming and HIV/AIDS prevention (disaggregated by sex).</p>	<p>Local PMOs (Qiben District, Qi County) and IAs</p> <p>-Contractors;</p> <p>-Consultants (social, gender and community development specialist)</p> <p>-other agencies (Women Federation, Poverty Alleviation Office, Employment Bureau, etc.);</p>	<p>2016-2021</p>	<p>Included in project costs</p>	<p>Quarterly progress reports submitted (include reported injuries, and other indicators).</p>
<p>4. Conduct public awareness and other community participation activities in various subcomponents:</p> <p>4.1 Develop and distribute leaflets/materials on solid waste management, wetland management, and importance of greening program.</p>	<p>Number of stakeholders including local people/communities, schools, tourists, women, community volunteers, and other agencies attending the public awareness campaign/training (with 50% female participation).</p>	<p>Local PMOs (Qiben District, Qi County) and implementing agencies</p> <p>-Contractors;</p> <p>-Consultants (social, gender and community development specialist)</p>	<p>2016-2020</p>	<p>Included in project costs</p>	<p>Attendance sheet (sex disaggregated data)</p> <p>Evaluation Form after the training</p> <p>Quarterly Progress Report</p> <p>Semiannual and</p>

Proposed Actions	Target Indicators	Agencies/ Persons Responsible	Time Frame	Funding Source	Monitoring Tools/ Indicators
<p>4.2 Conduct public awareness/training on solid waste segregation, collection and maintenance.</p> <p>4.3 Engage local people including women in environment management and ecological conservation/ biodiversity protection and other related topics.</p>		<p>-other agencies (Women Federation, Poverty Alleviation Office, Employment Bureau, Tourism, Wetland Park Management, etc.).</p>			Annual Report
<p>5. Ensure that the local people/communities are engaged in community participation activities; and facilitate the linkage of local people/ communities with relevant local agencies that could provide them jobs, sustainable source of income and other livelihood opportunities.</p> <p>5.1 Involve the local people including the poor women, and vulnerable persons in the community participation activities and facilitate their linkages with local agencies to provide them jobs, sustainable source of income and other livelihood opportunities (tourism development, etc.).</p> <p>5.2 Organize community based groups (as volunteers or part-time cleaners/garbage collectors, and other related jobs) to ensure sustainability of the project (i.e., solid waste management, wetland management, river banks and barren hills greening).</p>	<p>(i) Number of local people including women, farmers, low income households and other vulnerable persons involved in community participation activities (i.e. public awareness, training, employment in implementation and operation stages, consultations, and other activities that entail community participation).</p> <p>(ii) Number of community based groups organized (as volunteers or part-time cleaners/garbage collectors, and other related jobs) and linked with local agencies for possible livelihood assistance to augment their household income.</p>	<p>Local PMOs (Qiben District, Qi County) and IAs -Contractors; -Consultants (social, gender and community development specialist) -other agencies (Women Federation, Poverty Alleviation Office, Employment Bureau, Tourism, Wetland Park Management, etc.).</p>	2016-2012	Included in project costs	<p>Quarterly Progress Report;</p> <p>Semiannual and Annual Report</p> <p>Include sex disaggregated data in the reports (number and sex of volunteers mobilized, participants trained, and people involved in community participation activities).</p>

ENVIRONMENTAL MANAGEMENT PLAN

People's Republic of China: Henan Hebi Qihe River Environmental Improvement and Ecological Conservation Project

This environmental management plan is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the "terms of use" section of the ADB website in which the full environmental impact assessment is given.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

A. Objectives

1. This Environmental Management Plan (EMP) is for the Henan Hebi Qihe River Environmental Improvement and Ecological Conservation Project in Hebi City of Henan Province, the People's Republic of China (PRC). The EMP complies with the Asian Development Bank's (ADB) Safeguard Policy Statement (SPS, 2009) and is based on the domestic Environmental Impact Assessments (DEIAs) prepared by Beijing Zhonghuan Guohong Environment and Resource Technology Limited Company and project EIA. The EMP describes: roles and responsibilities of all project agencies to implement this EMP; mitigation measures; inspection, monitoring, and reporting arrangements; training and institutional strengthening; grievance redress mechanism (GRM); and future public consultation.

2. In the design stage the PMO will pass this EMP to the design institutes for incorporating mitigation measures into the detailed designs. The EMP will be updated at the end of the detailed design, as needed. To ensure that bidders will respond to the EMP's provisions, the PMO and local project implementation units (PIUs) will prepare and provide the following specification clauses for incorporation into the bidding documents: (i) a list of environmental management requirements to be budgeted by the bidders in their proposals, (ii) environmental clauses for contractual terms and conditions, and (iii) component DEIAs, and project EIA including updated EMP for compliance.

B. Organizations and Their Responsibilities for EMP Implementation

3. Hebi City Government (HCG) is the project Executing Agency (EA). A Project Leading Group (PLG) and a Project Management Office (PMO) have been established in the HCG. The PLG is chaired by the executive vice mayor of HCG, with members from the Hebi City Government, Hebi Finance Bureau, Hebi Development and Reform Commission, and other relevant agencies. The PMO is located in the Hebi Finance Bureau and comprises staff and representatives from the relevant government departments. Qi County Government, Qibin District Government and Xun County Government will be Implementing Agencies (IAs)

4. HCG (through PMO) and the IAs (through the PIUs) will assume overall responsibility for implementing, supervising, monitoring and reporting on the EMP. Their capacity to implement the EMP, as well as the capacity of the PIUs to manage project facilities, will be strengthened through capacity building and training activities defined in the EMP.

Table EMP-1: Project Implementation Units

No.	Proposed Subcomponent	Project Implementing Unit (PIU)
1. Ecological conservation and environmental management of upper Qihe River and its watershed enhanced		
1.1	Qihe River Upstream Ecological Protection	Qibin District Forestry Bureau
1.2	Restoration and management of pilot Qihe River National Wetland Park	Qibin District Forestry Bureau and Qi County Forestry Bureau
2. Lower Qihe River Mainstream and Tributaries improved		
2.1	Qihe Mainstream Watercourse Improvement in Qi County (21 km)	Qi County Water Resource Bureau and Xun County Water Resource Bureau
2.2	Four Tributary Watercourse Improvement in Qi County	Qi County Water Resource Bureau
2.3	Five Canal Watercourse Improvement in Qibin District	Qibin District Municipal Administration Division
3. Wastewater and Solid Waste Management in the Qihe River Basin improved		
3.1	Qibin District Wastewater Management	Qibin District Housing and Rural and Urban Development Bureau
3.2	Qi County Wastewater Management	Qi County Housing, Rural and Urban Development Bureau,

No.	Proposed Subcomponent	Project Implementing Unit (PIU)
		and Rural Urban Integrated District Land Administration Bureau
3.3	Solid Waste Management	As above
4. Institutional and technical support system for integrated management of the Qihe River Basin improved		
4.1	Qihe River Ecological Monitoring Program	Hebi City PMO
4.2	Qihe River Basin Management Information System	Hebi City PMO
4.3 – 4.6	Project start-up support consulting services; loan implementation consulting services; external resettlement monitoring and evaluation; training	Hebi City PMO

5. **PMO Environment Officer.** The PMO will have main EMP coordination responsibility. The PMO will assign a full-time PMO Environment Officer to coordinate EMP implementation. The officer will: (i) ensure that environmental management, monitoring, and mitigation measures are incorporated into bidding documents, construction contracts and operation management plans; (ii) coordinate the project level GRM; (iii) on behalf of PMO, prepare semiannual EMP monitoring and progress reports, for submission to ADB; (iv) coordinate the training and consultation plans defined in the EMP; (v) respond to any unforeseen adverse impacts beyond those mentioned in this EMP; and (vi) coordinate work with the PIU Environment Officers.

6. **PIU Environment Officers.** Each PIU will assign one full-time PIU Environment Officer to coordinate EMP at local level i.e. total of nine officers. These officers will: (i) implement the EMP at a day-to-day site level; (ii) coordinate the recruitment of construction supervision companies; (iii) act as local entry points to the GRM; (iv) report to the PIUs and PMO on EMP implementation progress; and (v) work closely with the PMO Environment and Social Officers to coordinate EMP work, including reporting and the GRM, across the project area.

7. **Loan implementation environment consultant.** A LIEC will be hired under the loan implementation consultant services. The LIEC will advise the PMO, PIUs, contractors, and construction supervision companies on all aspects of environmental management and monitoring for the project. The LIEC will (i) assist in updating the EMP and environmental monitoring program, as needed; (ii) supervise the implementation of the mitigation measures specified in the EMP; (iii) train the PMO and PIUs in how to prepare the semiannual EMP monitoring and progress reports to ADB and during the early stages of training, lead the preparation of these documents; (iv) provide training to the PMO, PIUs, and CSCs on the PRC's environmental laws, regulations and policies, ADB's SPS (2009), EMP implementation, and GRM in accordance with the training plan (Table EMP-6); (v) identify any environment-related implementation issues, and propose necessary corrective actions; and (vi) undertake site visits for EMP inspection as required. TOR for the LIEC is in Appendix 1.

8. **Construction Contractors and Construction Supervision Companies (CSCs).** Construction contractors will be responsible for implementing relevant EMP mitigation measures during construction, under the supervision of the CSCs and PIUs. Contractors will develop site-specific EMPs on the basis of this project EMP. CSCs will be selected through the PRC bidding procedure by the PIUs. The CSCs will be responsible for supervising construction progress and quality, and EMP implementation on construction sites. Each CSC shall have at least one environmental engineer on each construction site to: (i) supervise the contractor's EMP implementation performance; and (ii) prepare the contractor's environmental management performance section in monthly project progress reports submitted to the PIUs and PMO.

C. Potential Impacts and Mitigation Measures

9. Prior to construction, the PMO will assess the project environmental readiness using Table EMP-2 and review with ADB. If necessary, corrective actions will be identified to ensure that all requirements are met.

Table EMP-2: Project Readiness Assessment Indicators

Indicator	Criteria	Assessment	
		Yes	No
EMP update	The EMP was updated after technical detail design, and approved by ADB	<input type="checkbox"/>	<input type="checkbox"/>
Compliance with loan covenants	The borrower complies with loan covenants related to project design and environmental management planning	<input type="checkbox"/>	<input type="checkbox"/>
Public involvement effectiveness	<ul style="list-style-type: none"> • Meaningful consultation completed • GRM established with entry points 	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Environmental supervision in place	<ul style="list-style-type: none"> • LIEC is in place • Environment Officer appointed by PMO • EMS and CSCs contracted by PMO • EMC appointed by each PIUs 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Bidding documents and contracts with environmental safeguards	• Bidding documents and contracts incorporating the impact mitigation and environmental management provisions of the EMP.	<input type="checkbox"/>	<input type="checkbox"/>
Site construction planning (Environmental)	Site environmental management and supervision plan prepared for each work site by the PMO, PIUs and contractors.		
EMP financial support	The required funds have been set aside by contractors, PMO and PIUs to support the EMP implementation	<input type="checkbox"/>	<input type="checkbox"/>

Note. ADB=Asian Development Bank; IA = Implementing Agency, PMO=Hebi Project Management Office; LIEC = Loan Implementation Environmental Consultant, PIU=Project Implementing Unit,

10. Table EMP-3 lists the potential project impacts and mitigation measures during the pre-construction, construction and operational phases. Those that will be permanently become part of the infrastructure such as noise reduction materials and odor removal facilities for the wastewater treatment plant will be included in the design of the facilities by the contracted design institute. The costs of building and maintaining these systems have already been included in the infrastructure construction and operating costs and therefore will not be double-counted as part of the EMP costs.

11. Those mitigation measures that are temporary measures particularly during the construction stage, such as dust suppression by watering and wheel washing, the use of quiet and low-powered mechanical equipment and temporary noise barriers will need to be included in the tender documents. Contractors will be required to include the EMP in their bid packages to satisfy the environmental contract clauses for implementing the EMP.

Table EMP-3: Potential Impacts and Mitigation Measures during Pre-construction and Construction Phases

Item	Potential issues	Mitigation measures	Implement	Supervise	Source of Funds
A. DESIGN AND CONSTRUCTION PHASES					
Design for barren hills greening	Introduction of weed species to local vegetation communities	Only utilize native plant species of local provenance, as listed in Table IV-2 in Section IV of EIA. These are native species selected adapted to the local climate and soil conditions.	LDI	PMO, PIUs, LIEC	Included in design contract
Design for Qihe River wetland conservation and rehabilitation	Protection of flora and fauna species	Comply with the approved internal zoning of the park as described in the NWP Master Plan and Section IV.C.2 of this EIA; and, roads and pathways will follow existing disturbed areas	LDI	PMO, PIUs, LIEC	Included in design contract
Design Qihe River Mainstream and tributary improvement	Disposal of dredged sediment	Technical design of dredged sediment disposal site shall be approved	LDI	PMO, PIUs, LIEC	Included in design contract
	Eco-friendly design	Technical design of embankments shall be adequate and stable enough to withstand the strong force of heavy storm water flow but maximize the adoption of eco-friendly embankment designs	LDI	PMO, PIUs, LIEC	Included in design contract
Wastewater and storm water collection pipeline	Pipe burst	Design of the storm water and wastewater collection pipelines must be adequate to prevent pipe burst	LDI	PMO, PIUs, LIEC	Included in design contract
Design for Qi County wastewater treatment plant expansion	Odor removal	Technical design of the WWTP shall include facility and equipment to remove odor generated during plant operation	LDI	PMO, PIUs, LIEC	Included in design contract
		Establish 100 m buffer distance from boundary of WWTP to the nearest sensitive receiver for potential odor impact	LDI	PMO, PIUs, LIEC	Included in design contract
	Operational noise	Technical design of the WWTP shall contain proper acoustic design for pumps, blowers and other noisy equipment	LDI	PMO, PIUs, LIEC	Included in design contract
	Effluent standard	Design of WWTP shall achieve Class 1A treatment and discharge standards and safety of plant operation, with dual power supply to avoid interruption to plant operation due to power failure	LDI	PMO, PIUs, LIEC	Included in design contract
	Sludge	Design of WWTP shall include dewatering machine and temporary dry bed to produce sludge with water content of lower than 60%	LDI	PMO, PIUs, LIEC	Included in design contract
Design for solid waste management	Odor removal	Design of the solid waste transfer stations shall include facility and equipment to remove odor generated during plant operation	LDI	PMO, PIUs, LIEC	Included in design contract
A. PRE-CONSTRUCTION PHASE					
Institutional Strengthening	Lack of environment management	-PMO to appoint qualified environment specialist on its staff -Each PIU to appoint qualified environment specialist on its staff	LIEC	PMO	HCG

Item	Potential issues	Mitigation measures	Implement	Supervise	Source of Funds
	capacities within PMO and PIUs	-LIEC to conduct environment management training			
	Environment Monitoring Station (EMS)	-PMO to contract EMS to conduct independent verification of the project's environment performance and compliance with the approved EMP	EMS	PMO	HCG
EMP update	EMP does not reflect the final project design	Review mitigation measures defined in this EMP, update as required to reflect detailed design, disclose updated EMP on project website, and include updated EMP in all bid documents	PMO, assisted by LIEC	ADB	HCG
Grievance redress mechanism (GRM)	Handling and resolving complaints	Establish the project GRM; train all PMO and PIU staff in the GRM; disclose GRM to affected people before construction begins; maintain a complaint register to document all complaints	PMO and PIU Environment and Social Officers	PMO, PIUs, LIEC	HCG
Tender documents and works contracts	Environmental clauses for tender documents and contracts	Put into tender documents and works contracts the respective environmental clauses listed in the EMP	PIU, Tender Agent	PMO, LIEC	Included in tender agent contract
B. CONSTRUCTION PHASE					
Air Quality	Dust	<ul style="list-style-type: none"> - Assign haulage routes and schedules to avoid traffic intensive areas or residential areas - Spray water regularly on unpaved haul roads and access roads (at least once a day) to suppress dust; and erect hoarding around dusty activities - Cover material stockpiles with dust shrouds or tarpaulin. For the earthwork management for backfill, measures will include surface press and periodical spraying and covering. Extra earth will be cleared from site to avoid long term stockpiling - Minimize storage time of construction and demolition wastes on site by regularly removing them off site - Site asphalt mixing and concrete batching stations at least 300 m downwind of the nearest air quality protection target - Equip asphalt, hot mix and batching plants with fabric filters and/or wet scrubbers to reduce the level of dust emissions - Install wheel washing equipment or conduct wheel washing manually at each exit of the works area to prevent trucks from carrying muddy or dusty substance onto public roads - Keep construction vehicles and machinery in good working order, regularly service and turn off engines when not in use - Vehicles with an open load-carrying case, which transport 	Contractor	PIU, CSC, LIEC	Included in construction contract

Item	Potential issues	Mitigation measures	Implement	Supervise	Source of Funds
	Odor from dredged sediments	<p>potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin</p> <ul style="list-style-type: none"> - In periods of high wind, dust-generating operations shall not be permitted within 200 m of residential areas. Apply extra vigilance near sensitive receptors such as schools, kindergartens and hospitals <p>- Storage location: sediment pre-treatment sites will be located at least 200 m downwind from residential areas and other sensitive receptors e.g. schools</p> <p>- Storage conditions: At the Pond (temporary storage site), sediment will be covered with mulch then soil, then compacted with ventilation holes to reduce odor emissions. Install dust screens around the temporary storage site</p> <p>- Vehicles: Vehicles delivering pre-treated sediments to the temporary storage site will be covered with tarpaulin sheets. Overloading of these vehicles will be avoided. Vehicle speeds will be controlled, in particular near residential areas</p> <p>- Monitoring: Odor levels will be regularly monitored at sensitive areas (as defined in the monitoring plan)</p>	Contractor	PIU, CSC, LIEC	Included in construction contract
Noise	Noise from mechanical equipment and vehicles	<ul style="list-style-type: none"> - Ensure noise levels from equipment and machinery conform to PRC standard GB 12523-2011 - Properly maintain machinery to minimize noise - Equipment with high noise and/or vibration will not be used near village or township areas. Only low noise machinery or equipment with sound insulation will be employed - At work sites within 50 m of residences, install temporary noise barriers - No night time (between 22:00 and 06:00) construction within 300 m of sensitive receptors - Monitor noise levels (Table EMP-4). If noise exceeded by ≥ 3 dB, equipment and construction conditions shall be checked, and mitigation measures implemented - Provide workers with hearing protection 	Contractor	PIU, CSC, LIEC	Included in construction contract

Item	Potential issues	Mitigation measures	Implement	Supervise	Source of Funds
		<ul style="list-style-type: none"> - Control the driving speed of vehicles and machinery on-site - Inform residents prior to construction about anticipated noise levels and duration. For residents near the site and subject to prolonged noise exposure, provide hearing protection - Conduct regular interviews with residents adjacent to construction sites to identify feedback. This will be used to adjust work hours of noisy machinery 			
Vibration	Vibration caused by mechanical equipment and vehicles	<ul style="list-style-type: none"> - Piling and compaction prohibited at night - Communities will be informed prior to large earthworks and to avoid sensitive timing e.g. exams at nearby schools 	Contractor	PIU, CSC, LIEC	Included in construction contract
Surface water Quality	Construction wastewater and municipal wastewater from construction camps	<ul style="list-style-type: none"> - Unauthorized discharge of wastewater at sites is prohibited - Wastewater will be treated in grid and settling tanks before discharge into local sewers - Install septic tanks and portable toilets in project sites - Pre-treat wastewater from work camps and canteens with grid and settling tanks before discharge to municipal sewer, in compliance with national standards - Each contractor to develop a Spill Management and Emergency Response Plan for oil and other dangerous substances - Chemicals will be stored away from watercourses - Retention areas will be provided to contain accidental spills of toxic materials e.g. acids, oils, petroleum products - Storage facilities for fuels, oil, and other hazardous materials will be in secured areas on impermeable surfaces - Bunds and cleanup measures will be installed - Train workers on safe handling of chemicals and emergency response - Equipment wash-down sites to be equipped with water collection basins and sediment traps 	Contractor	PIU, CSC, LIEC	Included in construction contract
	Increase SS concentrations during construction works in canals and wetland	<ul style="list-style-type: none"> - All supernatant water from dredged sediment storage or disposal sites shall be treated to GB 8978-1996 Class I standard before discharging 	Contractor	PIU, CSC, LIEC	Included in construction contract

Item	Potential issues	Mitigation measures	Implement	Supervise	Source of Funds
Soil erosion		<ul style="list-style-type: none"> - Stockpile topsoil and cover - Install drainage system and settling ponds at construction sites - Lay straws or cloths at the entry/exit of runoff at each construction site - Limit works during rains and high winds - Carry out river/canal embankment work and rehabilitation works section by section with greening works implemented at the same time in order to avoid large scale soil erosion in rainy season - Properly slope or re-vegetate disturbed surfaces, such as compacted pipeline trenches and river banks - Regularly clean tires of construction vehicles - Soil erosion monitoring program will cover the sites of the sewage network, WWTP, dewatering sites for dredged sediment, temporary storage sites for dewatered sediment, wetland creation, material storage site and MSW transfer stations 	Contractor	PIU, CSC, LIEC	Included in construction contract
Solid waste		<ul style="list-style-type: none"> - Storage and containment: install waste storage containers for worker and hazardous wastes, away from sensitive receptors; regularly dispose to an approved disposal facility - Transport and disposal: city sanitation department will remove all wastes from sites; hold contractors responsible for proper removal and disposal of any significant residual materials, wastes and contaminated soils after construction - Management: prohibit burning of waste; multi-compartment collection bins will be installed to facilitate reuse, recycle of solid wastes. 	Contractor	PIU, CSC, LIEC	Included in construction contract
Ecological Resources	Destruction of habitats and wildlife	<ul style="list-style-type: none"> - Prior to construction, demarcate and protect vegetation, fauna habitats, and any nests or other fauna found at construction sites - For Qihe River Crucian Carp, protect known spawning locations in the Qihe River: (i) prior to any mainstream or bank-side works, consult HCG Agricultural Bureau on locations; (ii) avoid any river works in the NWP in the spawning season (May-June) 	Contractor	PIU, CSC, LIEC	Included in construction contract

Item	Potential issues	Mitigation measures	Implement	Supervise	Source of Funds
		<ul style="list-style-type: none"> - Properly backfill, compact and re-vegetate pipeline trenches after pipeline installation - Use native plant species of local provenance for site rehabilitation (Table IV-2 in Section IV of EIA) - Carry out works of embankment protection section by section while implementing greening works at the same time, to minimize soil erosion and restore habitats - Immediately report any injured wildlife to PMO and/or PIU Environment Officer: do not catch or disturb the animal - CSCs and PMO / PIU Environment Officers will regularly inspect construction sites to ensure flora and fauna are well protected - For the pilot Qihe River National Wetland Park and barren hills greening, train and instruct workers in strict protocols: no littering, hunting, catching or eating of wildlife, or using natural areas as toilets 			
Impacts on socio-economic resources	Occupational health and safety	<ul style="list-style-type: none"> - Provide a clean and sufficient supply of fresh water, for construction and for all camps, offices and workshops - Provide sufficient latrines and other sanitary arrangements at the site and work areas, and ensure that they are cleaned and maintained in a hygienic state - Install garbage receptacles at construction site and camps and regularly empty them to prevent diseases - Provide personal protection equipment to workers e.g. safety boots, helmets, gloves, protective clothing, goggles, ear protection, in accordance with health and safety regulations - Prepare emergency response plan for accidents and emergencies, including hazardous material spills. Emergency phone link with hospitals will be established. A fully equipped first-aid base in each construction camp will be organized - Install and maintain a Records Management System to record and report occupational accidents, diseases, and incidents. Records will be reviewed during compliance monitoring and audits - Publicize safety, rescue and industrial health matters at all sites. Display posters on site safety and regulations 	Contractor	PIU, CSC, LIEC	Included in construction contract

Item	Potential issues	Mitigation measures	Implement	Supervise	Source of Funds
		<ul style="list-style-type: none"> - Train all workers in basic sanitation, health care - Implement awareness and prevention program for HIV/AIDS and other communicable diseases for workers and local community 			
	Community health and safety	<ul style="list-style-type: none"> - Prior to construction, prepare and implement a traffic control plan, with local traffic management authority. This shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings, and emphasis on public safety, signs, controls and planning in advance - Inform residents and businesses of the construction activities, given the dates and duration of expected disruption - Install clear signs at construction sites to warn people of potential dangers (moving vehicles, hazardous materials, excavations, etc.) and raise awareness on safety issues - Prohibit use of heavy machinery at night - Return equipment to overnight storage sites - Secure all construction sites from public access 	Contractor	PIU, CSC, LIEC	Included in construction contract
	Utilities provision interruption:	<ul style="list-style-type: none"> - Assess construction locations in advance to identify potential disruption to services and risks before starting construction - If temporary disruption is unavoidable the contractor will, with relevant local authorities (e.g. power, water, communications) develop a plan to minimize the disruption and communicate the dates and duration in advance to all affected people 	Contractor	PIU, CSC, LIEC	Included in construction contract
	Other Social Issues	<ul style="list-style-type: none"> - Civil works contracts will stipulate priorities to: (i) recruit workers locally to the extent possible; (ii) ensure equal opportunities for women and men; (iii) pay equal wages for work of equal value; (iv) not employ child or forced labor - Employment targets are included in the gender action plan 	Contractor	PIU, CSC, LIEC	Included in construction contract
C. OPERATION PHASE					
Barren Hill Greening and Qihe River Wetland	Maintenance of vegetation and landscape	Daily maintenance: manage the vegetation including pruning, weeding and replacement of dead or dying trees and shrubs. Pest control: the guiding principle will be prevention first followed by integrated treatment to avoid/reduce pollution from pesticide	O&M Unit	PMO, LIEC	O&M Unit Budget

Item	Potential issues	Mitigation measures	Implement	Supervise	Source of Funds
River rehabilitation	Maintenance of vegetation and landscape	Daily maintenance: pruning, weeding, replacement of dead or dying trees and shrubs. Pest control: none in wetland areas and along river; low-toxicity pesticides to be used in event of severe pest outbreak	O&M Unit	PMO, LIEC	O&M Unit Budget
	Embankment stability	Inspect all river embankment stabilization works for physical integrity. If signs of failure are discovered, a repair program will be implemented immediately	O&M Unit	PMO, LIEC	O&M Unit Budget
Qi County WWTP and 15 solid waste transfer stations (SWSs)	Air quality	WWTP shall maintain a buffer distance of 100 m from site boundary within which no development shall be allowed	O&M Unit	PMO, LIEC	O&M Unit Budget
	Noise	Maintain all mechanical equipment in good order and ensure operational noise at WWTP boundaries meets Grade II noise requirements of 60 dB (A) during daytime and 50 dB (A) at night (PRC Noise Standards at the Boundary of Industries and Enterprises; GB 12348-2008)	O&M Unit	PMO, LIEC	O&M Unit Budget
	Water quality	Treat effluent to Class 1 A of PRC Discharge Standard of Pollutants for Municipal Wastewater Treatment (GB 18918-2002)	O&M Unit	PMO, LIEC	O&M Unit Budget
		Transport wastewater from the SWSs that not connected to municipal sewers timely by suction trunk	O&M Unit	PMO, LIEC	O&M Unit Budget
Sludge	Sludge shall be dried to <60% moisture content to meet PRC Disposal of Sludge from Municipal Wastewater Treatment Plant-Quality of Sludge for Co-landing (GB/T 23485-2009) standard prior to landfill disposal	O&M Unit	PMO, LIEC	O&M Unit Budget	
	Occupational Health and safety	Compulsory use of safety equipment and clothing as necessary (e.g., non-slip boots, chemical resistant clothing, safety goggles, respiratory mask); safety instructions for storage, transport, handling or pouring of chemicals	O&M Unit	PMO, LIEC	O&M Unit Budget

Sources: ADB = Asian Development Bank, EIA = environmental impact assessment, LIEC = loan implementation environmental consultant, EPB = Environment Protection Bureau, IA = implementing agency, DI = design institute, O&M = operation and maintenance, PMO = project management office, PIU= project implementation unit, SEMSP = site environmental management and supervision plan, SWS = solid waste transfer station.

D. Monitoring and Reporting

12. Three types of project environmental monitoring will be conducted under the EMP: (i) internal monitoring and supervision and reporting by CSCs and PIUs; (ii) EMP implementation monitoring and progress reporting by the LIEC; and (iii) compliance monitoring by local EMS. The monitoring program (Table EMP-4) covers the scope of monitoring, parameters, time and frequency, implementing and supervising agencies, and estimated costs. Monitoring shall comply with the relevant national standards.

13. **Internal monitoring and supervision and reporting by CSCs.** During construction, the CSCs and PIUs will be responsible for conducting internal environmental monitoring in accordance with the monitoring and reporting plans (Tables EMP-4 and EMP-5). Supervision results will be reported through the CSC reports to the PIUs.

14. **EMP implementation monitoring and progress reporting.** The LIEC will review project progress and compliance with the EMP based on field visits, and the review of the environmental monitoring conducted by the EMS. The findings of the LIEC will be reported to ADB through the semiannual EMP monitoring and progress reports. The reports will include (i) progress made in EMP implementation, (ii) overall effectiveness of the EMP implementation (including public and occupational health and safety), (iii) environmental monitoring and compliance, (iv) institutional strengthening and training, (v) public consultation (including GRM), and (vi) any problems encountered during construction and operation, and the relevant corrective actions undertaken. The LIEC will help PMO prepare the reports and submit the English report to ADB for appraisal and disclosure.

15. **Environmental compliance monitoring by local EMS.** The PIUs in each county or district will contract the local EMS to conduct environmental monitoring in accordance with the monitoring program (Table EMP-4). A detailed cost estimate will be provided by the EMS prior to implementation. Monitoring will be conducted during construction and operation period, until a project completion report (PCR) is issued. Semiannual monitoring reports will be prepared by the EMSs and submitted to PMO and the PIUs.

16. **Project completion environmental audits.** Upon completion of each subproject, environmental acceptance monitoring and audit reports shall be (i) prepared by a licensed environmental monitoring institute in accordance with the PRC's Guideline on Project Completion Environmental Audit (2001), (ii) reviewed for approval by the environmental authorities, and (iii) reported to ADB through the semiannual progress reports. Subproject completion reports shall be finalized within 3 months after each subproject completion, or no later than 1 year with permission of the local environment protection bureaus.

17. **Quality assurance (QA) /quality control (QC) for compliance monitoring.** To ensure accuracy of the monitoring, QA/QC procedures will be conducted in accordance with the following regulations:

- i) Regulations of QA/AC Management for Environmental Monitoring issued by the State Environmental Protection Administration in July 2006;
- ii) QA/QC Manual for Environmental Water Monitoring (Second edition), published by the State Environmental Monitoring Centre in 2001; and
- iii) QA/QC Manual for Environmental Air Monitoring published by the State Environmental Monitoring Centre in 2001.

Table EMP-4: Environmental Impact Monitoring Program

Sub-component	Phase	Factor	Indicators	Location	Frequency	Implementing Entity	Supervising Entity
Qihe River National Wetland Park	Construction	Surface water quality	COD _{cr} , BOD ₅ , TN, TP, SS, oil	Near the Hanpodong water intake	Four times a year during peak construction	EMS	PMO, LIEC
Qihe River Mainstream and Tributary Water Course Improvement	Construction	Air Quality	Dust, TSP, PM ₁₀	Construction sites where there is resident areas within 300 m	1 day per month during construction	EMS	PMO, LIEC
			Odor (H ₂ S, NH ₃)	Each storage site for dredged sediment for: Zhejing, Side, and Hucheng Rivers; Zhaojia, Tianlai, Mianfeng, and Erzhi Canals, where there are residents ≤300 m	1 day per month during construction	EMS	PMO, LIEC
		Noise	Leq	Construction sites where there is resident areas within 200 m	2 times per day (day time, night time), 2 consecutive days every month	EMS	PMO, LIEC
	Operation	Water Quality	COD _{cr} , TN, TP, SS	Zhejing, Side and Hucheng Rivers; Zhaojia, Tianlai, Mianfeng, Erzhi Canals	1 time per day, 3 consecutive days	EMS	PMO, LIEC
Wastewater and Solid Waste Management	Construction	Air Quality	Dust: TSP, PM ₁₀	Construction sites where there is resident areas within 300 m	1 day per month during construction	EMS	PMO, LIEC
		Noise	Leq	Construction sites where there is resident areas within 200 m	1 day per month during construction	EMS	PMO, LIEC
	Operation	Wastewater	COD _{cr} , BOD ₅ , TN, TP, SS	Qi County WWTP effluent outfall	1 time per day, 3 consecutive days every 3 months for first 3 years of operation	EMS	PMO, LIEC
		Noise	Leq	At four site boundaries of: Qi County WWTP; 15 solid waste transfer stations if there is residential area within 200 m	1 time per day, 1 day every 3 months for first years of operation	EMS	PMO, LIEC
		Air Quality	Odor (H ₂ S, NH ₃)	At four site boundaries of: a) Qi County WWTP b) 15 solid waste transfer stations if there is residential area within 300 m	1 time per day, 1 day every 3 months for first years of operation	EMS	PMO, LIEC

BOD₅ = 5-day biochemical oxygen demand; COD_{cr} = chemical oxygen demand; CSC = construction supervision company; EMS = environmental monitoring station; LAeq = equivalent continuous A-weighted sound pressure level; LIEC = loan implementation environmental consultant; LSMI = licensed soil erosion institute; NH₃-N = ammonia nitrogen; PM₁₀ = particles measuring ≤10µm; PMO = project management office; PIU= project implementing unit; SO₂ = sulfur dioxide; SS = suspended solids; TSP = total suspended particle.

18. Environmental reporting for the project is described in Table EMP-5.

Table EMP-5: EMP Reporting Plan

Reports		From	To	Reporting Frequency
Construction Phase				
Internal progress reports by contractors	Internal project progress report by construction contractors, including EMP monitoring results by CSCs	Contractors, CSCs	PIUs	Monthly (during construction season)
Internal progress reports by PIUs	Internal project progress report including EMP implementation progress	PIUs	PMO	Quarterly
Environmental impact monitoring reports	Environmental impact monitoring report	EMS	LIEC, PMO	Monthly
Reports to ADB	Project progress report (including section on EMP implementation and monitoring)	PMO with support of LIEC	ADB	Semiannual
	Environment monitoring reports	PMO with support of LIEC	ADB	Semiannual
Acceptance reports	Environmental acceptance monitoring and audit report	Licensed institute	Hebi EPB	Once for each engineering subcomponent, not later than one year after completion of physical works
Operation Phase				
Environmental impact monitoring	Environmental impact monitoring report (during first three year of operation and/or up to 1 year after project completion, whichever is first)	LIEC	PIUs, PMO	Quarterly
Reports to ADB	Project progress report (including section on EMP implementation and monitoring)	PMO	ADB	Semiannually
	Environment progress and monitoring report	PMO	ADB	Once (after first year of operation)

ADB=Asian Development Bank; EMS=Environment Monitoring Station, LIEC = loan implementation environmental consultant, PIU = project implementation unit, PMO = project management office.

E. Training

19. The project agencies have no previous experience with ADB-funded projects or safeguard requirements. To ensure effective implementation of the EMP, the capacity of PMO, PIUs, O&M Units, contractors, CSCs, and local bureaus (especially forestry and water resources) will be strengthened. The project will implement institutional capacity building, and training, as follows:

- (i) Appointment of PMO and PIU Environment Officers and Social Officers;
- (ii) Contracting of a wetland specialist and river specialist to support detailed design and implementation;
- (iii) Contracting of a LIEC to support the PMO and PIUs with EMP implementation and ensure compliance with ADB's Safeguard Policy Statement (SPS, 2009); and,
- (iv) Implementation of a training program for all relevant agencies (Table EMP-6). Training will be facilitated by the loan implementation consultants, including the LIEC, wetland, and river specialists.

Table EMP-6: Training Program

Training	Attendees	Contents	Times	Period (days)	No. of persons
EMP update and implementation	PMO, PIUs, contractors, CSCs, local EPB	Development and update EMP, roles and responsibilities, monitoring, supervision and reporting procedures, review of experience (after 12 months)	Twice - Once prior to, and once after one year of project implementation	2x0.5	40
Grievance Redress Mechanism	PMO, PIUs, contractors, CSCs, local EPB	Roles and responsibilities, Procedures, review of experience (after 12 months)	Twice - Once prior to, and once after one year of project implementation	2x0.5	40
Environmental aspects of facilities operation	PMO, O&M unit	Environmental housekeeping; Sludge treatment and disposal process; Safety operation regulations Emergency preparedness and breakdown response procedures	Once during project operation	1	50
Wetland management	PMO, PIUs, river guards, EPBs, QRMO	Basic principles of wetland management; maintaining the restored habitats; wetland species protection	Ongoing during implementation	Ongoing	tbd
Flood management and operation of MIS	PMO, PIUs, EPBs, QRMO	Operation of the Qihe River MIS for flood warning and forecasting	Ongoing during implementation	Ongoing	tbd

EPB = environment protection bureau, MIS = Qihe River management information system, O&M = operations and maintenance, PIU = project implementation unit, PMO = project management office, QRMO = Qihe River Management Office, tbd = to be decided.

F. Public Consultation

20. Two rounds of public consultation were conducted during project preparation (Section

VIII of the EIA). During construction, the project will continue public consultations and raising awareness of project activities, especially those which may impact the public such as noise or dust. The public consultation plan (Table EMP-7) includes public participation in evaluating environmental benefits and impacts. The PIUs are responsible for public participation. They will be supported by the PMO Environment and Social Officers and the LIEC.

Table EMP-7: Public Consultation and Participation Plan

Organizer	Approach	Times/Frequency	Subjects	Participants
Construction				
PMO, PIUs, LIEC	Questionnaire survey, site visits, informal interviews	Once a year during peak construction	Construction impacts; adjusting mitigation measures if necessary; feedback	Workers, residents in construction areas
	Public workshops	At least once during peak construction	EMP implementation progress; construction impacts; adjusting mitigation measures if necessary; feedback	Residents, affected persons, social sectors
Operation				
PMO, PIU, operators of project facilities	Public consultation and site visits	At least once in first year of operation	Effects of mitigation measures, impacts of operation, feedback	Residents, affected persons adjacent to project facilities
	Public workshop	As needed based on public consultation	Effects of mitigation measures, impacts of operation, feedback	Residents, affected persons, social sectors
	Public satisfaction survey	At least once after one year of operation	Comments and suggestions	Project beneficiaries

G. Grievance Redress Mechanism

21. A project-specific grievance redress mechanism (GRM) has been established to receive and manage any public environmental and/or social issues which may arise due to the project. This complements the PRC's national environmental complaint hotline (12369). The PMO and PIU Environment Officers and Social Officers will coordinate the GRM. All project agencies and staff will be trained in the GRM and will take an active role in supporting the GRM when necessary.

22. At the PMO level, the PMO Environment Officers and Social Officers will establish a GRM tracking and documentation system, conduct daily coordination with the PIU officers, arrange meetings and conduct site visits as necessary, maintain the overall project GRM database, and prepare the reporting inputs for progress reports to ADB. At the PIU level, the environment and social officers will instruct the contractors and CSCs on the GRM procedures, and coordinate with the county EPBs and other government divisions as necessary. PMO and PIU staff will be trained and supported by the LIEC.

23. The contact persons for different GRM entry points, such as the PMO and PIU Environmental Officers and Social Officers, contractors, operators of project facilities (OPFs), and county EPBs, will be identified prior to construction. The contact details for the entry points (phone numbers, addresses, e-mail addresses) will be publicly disclosed on information boards at construction sites and on the websites of the PMO and county EPBs.

24. Once a complaint is received and filed, the PMO and PIU officers will identify if

complaints are eligible. Eligible complaints include those where (i) the complaint pertains to the project; and (ii) the issues arising in the complaint fall within the scope of environmental issues that the GRM is authorized to address. Ineligible complaints include those where: (i) the complaint is clearly not project-related; (ii) the nature of the issue is outside the mandate of the environmental GRM (such as issues related to resettlement, allegations of fraud or corruption); and (iii) other procedures are more appropriate to address the issue. Ineligible complaints will be recorded and passed to the relevant authorities, and the complainant will be informed of the decision and reasons for rejection. The procedure and timeframe for the GRM is as follows and also summarized in Figure EMP-1.

- **Stage 1 (5 days):** If a concern arises during construction, the affected person may submit a written or oral complaint to the contractor. Whenever possible, the contractor will resolve the issue directly with the affected person. The contractor shall give a clear reply within five (5) working days. The contractor will keep the PIU fully informed at all stages.
- **Stage 2 (5 days):** If the issue cannot be resolved in Stage 1, after five days, the PIU and/or PMO will take over responsibility. Eligibility of the complaint will be assessed and a recommended solution given to the complainant and contractors within five (5) working days. If the solution is agreed by the complainant, the contractors and/or facility operators will implement the solution within seven days. Written records will be made of all stages and outcomes.
- **Stage 3 (10 days):** If no solution can be identified by the PMO and/or PIU, and/or the complainant is not satisfied with the proposed solution, the PMO and/or PIU will organize, within ten (10) days, a stakeholder meeting (including the complainant, contractor and/or operator of the facility, county EPB, PIU, PMO). A solution acceptable to all shall be identified including clear steps. The contractors (during construction) and facility operators (during operation) will immediately implement the agreed solution. Written records will be made of all stages and outcomes.

25. The GRM does not affect the right of an affected person to submit their complaints to any agency they wish to, for example the local village committee, community leaders, courts, PMO, PIU, and/or Asian Development Bank.

26. The PMO and PIUs shall bear any and all costs of implementing the GRM, including meeting, travel, and/or accommodation costs of the project staff or affected person. The GRM will be implemented throughout project construction and at least the first year of operation for each project facility.

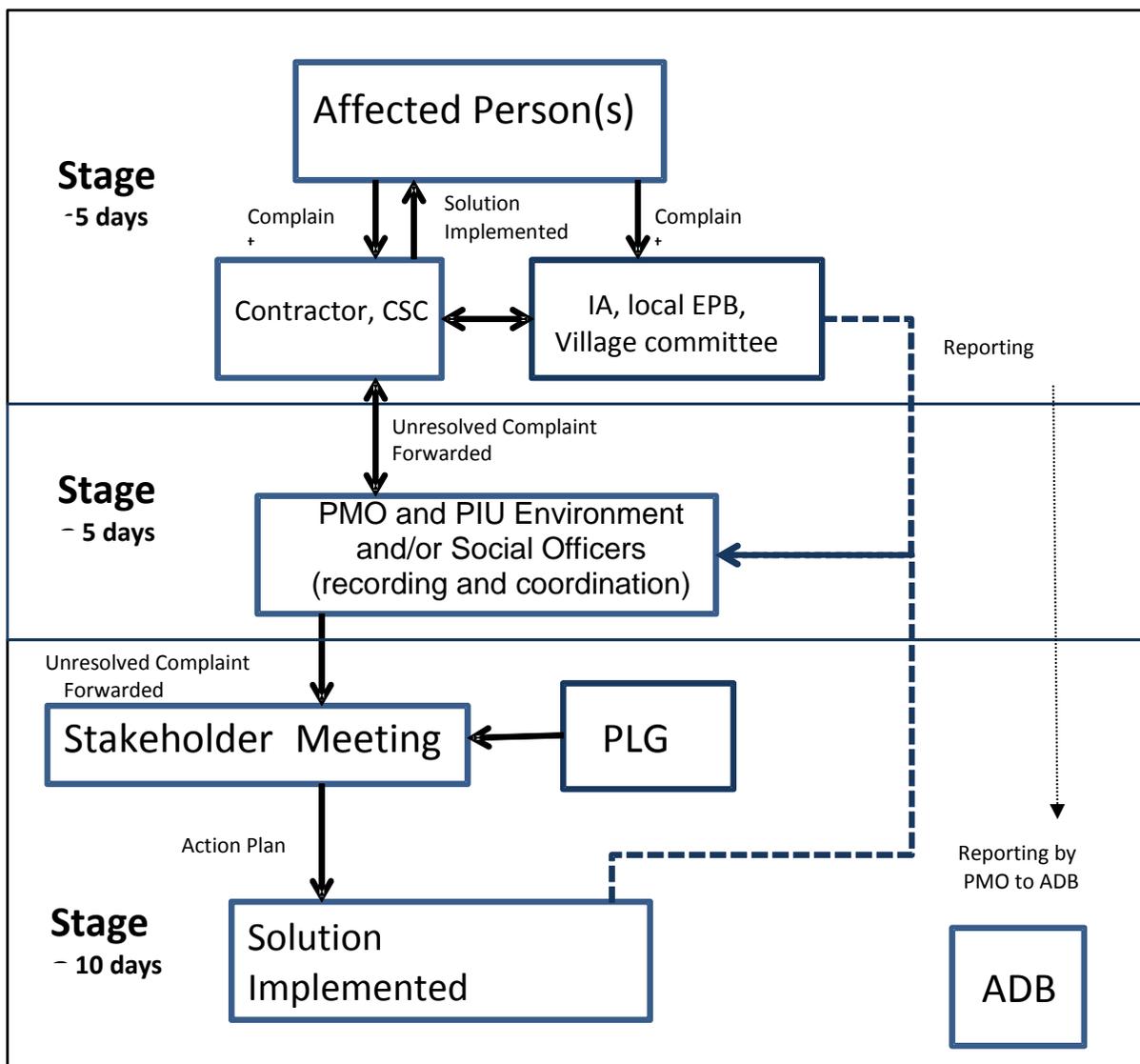


Figure EMP-1: Grievance Redress Mechanism

H. Cost Estimates

27. The cost estimates for EMP implementation comprises mitigation measures (Table EMP-3); monitoring (Table EMP-4); training (Table EMP-6) and public consultation (Table EMP-7) and are summarized in Table EMP-8. The costs do not include: (i) detailed design revisions and adjustments; (ii) internal monitoring/inspection of solid wastes disposal, soil erosion and re-vegetation, occupational health and safety during construction, as this will be included in the construction supervision contracts; (iii) salaries of PMO and PIU staff; (iv) infrastructure costs related to environment and public health that are already included in the project direct costs; and (v) environmental mitigation measures cost during operation as it is covered by O&M budget. The cost is estimated based on information in the FSR, domestic EIAs and/or the experience of the PPTA team from other projects. All costs were discussed with the EIA Institute, PMO and IAs.

28. The total estimated cost for EMP implementation is CNY15.7646 million (USD2,542,677)

(Table EMP-8). The estimated cost for the PMO is CNY 1,500,000 (9.5%) and for contractors is about CNY14,264,600 (90.5%).

Table EMP-8 Estimated Cost for EMP Implementation

EMP Item		Cost (CNY10,000)
Mitigation measures Implementation during construction	Qihe River Wetland Conservation and Rehabilitation	139.6
	Qihe River Mainstream Watercourse Improvement in Qi County	118.94
	Four Tributary Watercourse Improvement in Qi County	106.24
	Five Canal Watercourse Improvement in Qibin District	147.99
	Qibin District Wastewater Management	50.6
	Qi County WWTP Expansion	63.9
	Storm water and wastewater pipelines	760.17
	Construction of urban 15 solid waste transfer stations and associated facilities	39.02
	Subtotal	1,426.46
	External Environmental monitoring by LIEC	130
	Public Consultation	10
	Training	10
	Total	1,576.46

I. Mechanisms for Feedback and Adjustment

29. Based on environmental inspection and monitoring reports, the PMO and PIUs shall decide, in consultation with the LIEC, whether (i) further mitigation measures are required as corrective actions, or (ii) some improvements are required for environmental management practices. The effectiveness of mitigation measures and monitoring plans will be evaluated by a feedback reporting system. Adjustment to the EMP will be made, if necessary. The PMO Environmental Officers will play a critical role in the feedback and adjustment mechanism.

30. If during inspection, substantial deviation from the EMP is observed or any changes are made to the project that may cause substantial adverse environmental impacts or increase the number of affected people, then the PMO and PIUs will immediately consult with ADB and form an environmental assessment team to conduct additional environmental assessment. If necessary, further public consultation will be undertaken. The revised domestic EIAs and project EIA, including this EMP, will be submitted to the ADB for review, appraisal, and public disclosure. The revised EMP will be passed to the contractors, CSCs and OPFs for implementation.

APPENDIX 1. DRAFT TERMS OF REFERENCE FOR ENVIRONMENTAL POSITIONS

1. PMO ENVIRONMENT OFFICER

A. Background

1. Development projects supported by the Asian Development Bank (ADB) routinely include a project management office (PMO). The PMO is responsible for project implementation and comprises the provincial and/or municipal agencies involved in the project. Compliance with the loan and project agreements include implementation of an environment management plan (EMP), which is prepared as part of the project environment impact assessment. The EMP is the critical guiding document to manage, monitor, and report upon potential project environmental impacts. Implementation of the EMP is a full-time task. For this reason, the PMO assigns at least one full-time officer for this role. These terms of reference describe the requirements for this officer.

B. Scope and Duration of Work

2. The officer will work on behalf of the PMO to implement the project EMP. The officer will report directly to the PMO. The position is for the entire project duration (5 years).

C. Qualifications

3. The officer will have: (i) a bachelor's degree or higher in environmental management or related field; (ii) at least 5 years of experience in environmental management, monitoring, and/or impact assessment; (iii) ability to communicate and work effectively with local communities, contractors, and government agencies; (iv) ability to analyze data and prepare technical reports; (v) willingness and health to regularly visit the project construction sites and in different seasons; and (vi) ideally, good spoken and written English.

D. Detailed Tasks

4. The officer will have a detailed understanding of the project EMP and supporting documents, including the domestic environmental reports, the project environmental impact assessment (EIA), and environmental assurances. The officer will have the following tasks.

- (i) Assess whether the EMP requires updating due to any changes in project design, which may have occurred after the EMP was prepared.
- (ii) Distribute the Chinese language version of the EMP to all relevant agencies, including the implementing agencies, and provincial and municipal agencies for environment protection. This should occur at least 3 months before construction begins.
- (iii) Conduct meetings with agencies as necessary to ensure they understand their specific responsibilities described in the EMP.
- (iv) Ensure that relevant mitigation, monitoring, and reporting measures in the EMP are included in the bidding documents, contracts, and relevant construction plans.
- (v) Confirm that the implementing agencies responsible for the internal environment monitoring described in the EMP understand their tasks and will implement the monitoring in a timely fashion.
- (vi) At least 3 months before construction begins, establish and implement the project grievance redress mechanism (GRM) described in the EMP. This will include: (a)

preparation of a simple table and budget identifying the type, number, and cost of materials needed to inform local communities about the GRM and starting dates and scope of construction; (b) design, prepare, and distribute these materials, and plan and conduct the community meetings; (c) prepare a form to record any public complaints; (d) preparation of a summary table to record all complaints, including dates, issues, and how they were resolved; and (e) ensure that all relevant agencies, including contractors, understand their role in the GRM.

- (vii) Prior to construction, ensure that the implementation agencies and their contractors have informed their personnel, including all construction workers, of the EMP requirements. This will include all mitigation measures relating to impacts to air, water, noise, soil, sensitive sites, ecological values, cultural values, worker and community health and safety, respectful behavior when communicating with local communities, and responding to and reporting any complaints.
- (viii) During project construction, make regular site visits with the loan implementation environment consultant (LIEC) to assess progress, meet with contractors and/or local communities, and assess compliance with the EMP.
- (ix) Ensure that all relevant agencies submit required progress reports and information, including environmental monitoring and reports of any issues or grievances.
- (x) Compile, review, and store environmental progress reports from the implementation agencies, records of any grievances, and any other relevant issues. Maintain digital copies of all information. When necessary, enter data into summary tables in digital format (e.g., to transfer records of grievances from hard copy forms). Ensure that all information is stored in the PMO filing system, backed up, and can be easily retrieved.
- (xi) Prepare semiannual environment progress reports.
- (xii) Work closely with the PMO, implementation agencies, loan implementation consultants, and other agencies and personnel as necessary to conduct these tasks.

E. Reporting Requirements

5. Semiannual environment monitoring reports using the template provided by ADB or a domestic format reviewed and approved by ADB.

F. Logistical Support Provided by the PMO to the Environment Officer

- (i) Provision of hard and soft copies of the project EMP, domestic and project environmental reports, feasibility study reports, loan and project agreements, maps, and other supporting materials as necessary to ensure the officer can implement the tasks.
- (ii) Vehicle transport, office materials, and other logistical support, as necessary for the officer to visit the project construction sites and local communities, arrange and conduct meetings, and prepare and distribute consultation materials.
- (iii) Overall coordination, including review of the draft semiannual monitoring reports, and final responsibility for submission of the monitoring reports to ADB.

2. PROJECT IMPLEMENTATION UNIT (PIU) ENVIRONMENT OFFICER

A. Background

6. The project will be coordinated by a PMO. Overall coordination of the project EMP is the responsibility of the PMO Environment Officer. At the field level, implementation of the EMP will be undertaken by the project implementation office (PIU) in each district or county. For this purpose, the PIUs each require a PIU Environment Officer. There will be one PIU Environment Officer per PIU i.e. nine officers.

B. Scope and Duration of Work

7. The officer will work on behalf of the PIU for daily site-level implementation of the project EMP. The officer will report directly to the PIU manager and work closely with the county environment protection bureau (EPB), environment monitoring station (EMS), and PMO Environment Officer. The position is for the entire project duration (5 years).

C. Qualifications

8. The officer will have: (i) a bachelor's degree or higher in environmental management or related field; (ii) at least 5 years of experience in environmental management, monitoring, and/or impact assessment; (iii) ability to communicate and work effectively with local communities, contractors, and government agencies; (iv) ability to analyze data and prepare technical reports; (v) willingness and health to regularly visit the project construction sites and in different seasons; and (vi) ideally, proficiency in spoken and written English.

D. Detailed Tasks

9. The PIU Environment Officers will have a detailed understanding of the project EMP and supporting documents, including the domestic environmental reports, project EIA, and project environmental assurances. The officer will have the following tasks.

- (i) Work closely with the PMO Environment Officer, EPB, EMS, contractors, construction supervision companies, and all other relevant agencies to implement the EMP.
- (ii) Distribute the Chinese language version of the EMP to all relevant agencies, including the implementing agencies, provincial and municipal agencies for environment protection. This should occur at least 3 months before construction begins.
- (iii) Conduct meetings with agencies as necessary to ensure they understand their specific responsibilities described in the EMP.
- (iv) Ensure that contractors implement the relevant mitigation measures in the EMP.
- (v) Implement the monitoring and reporting requirements in the EMP, including timely submission of progress reports to the PIUs and PMO Environment Officer.
- (vi) Implement the project GRM.
- (vii) Make regular inspections of construction sites to assess progress, meet with contractors and/or local communities, and assess compliance with the EMP.
- (viii) Maintain digital records of all progress and information.
- (ix) Support the PMO Environment Officer in all of their tasks.

E. Reporting Requirements

10. Monthly reports to the PIU and PMO Environment Officer.

3. LOAN IMPLEMENTATION ENVIRONMENTAL CONSULTANT

A. Background

11. The project will be coordinated by a PMO, whose overall responsibility includes implementation of the project EMP. At the field level, the project will be implemented by nine PIUs in each of the project counties and districts. The PMO and PIUs will be assisted by a loan implementation consultant team. The loan implementation environmental consultant (LIEC) will be a part of this team and will support the PMO and PIUs to implement the project EMP.

B. Scope and Duration of Work

12. This position could be a firm or an individual engaged by the PMO. It is an independent position. It is not part of the PMO in-house environmental team or the implementing agencies. The specialist will report directly to the PMO. The position is [12 person-months] over the entire project duration (5 years). The LIEC should be recruited as soon as possible after loan effectiveness, as the first task is to confirm project environmental readiness.

C. Qualifications

13. The specialist will have: (i) a bachelor's degree or higher in environmental management or related field; (ii) at least 8 years of experience in environmental management, monitoring, and/or impact assessment; (iii) familiarity with ADB project management requirements and national environmental management procedures; (iv) ability to communicate and work effectively with local communities, contractors, and government agencies; (v) ability to analyze data and prepare technical reports; (vi) willingness and health to regularly visit the subproject sites; and (vii) proficiency in spoken and written English.

D. Tasks

14. Working closely with the PMO and PIU environmental officers, the LIEC will do the following.

15. Before construction:

- (i) Ensure project environmental readiness, including: (i) all contractor contracts include, and will comply with, the EMP; and (iii) relevant sections of the EMP are incorporated in construction plans and contracts.
- (ii) Assist the PMO and PIUs to implement the GRM, including: (i) establish and publicize the GRM; and (ii) collate and evaluate grievances received.
- (iii) Develop procedures to: (i) monitor EMP implementation progress; (ii) collate and evaluate data collected in the EMP environmental monitoring program; and (iii) prepare and submit the semiannual environmental monitoring reports to ADB (to continue until project completion report).
- (iv) Undertake training of project agencies as required by the EMP training plan.
- (v) Provide hands-on support and on-the-job training to the PMO, implementing agencies, and contractors on the specific requirements of the EMP as required.

16. During project implementation:

- (i) Undertake site visits to all implementing agencies during subproject construction and operating phase.

- (ii) Assist in the ongoing public consultation process as described in the project EIA.
- (iii) Conduct EMP compliance assessments, identify any environment-related implementation issues, and propose necessary responses in corrective action plans.
- (iv) Undertake training of project agencies as required by the EMP training plan.
- (v) Assist the PMO to prepare semiannual environmental monitoring progress reports for submission to ADB.

4. WETLAND ECOLOGIST

E. Background

17. The project will be coordinated by a PMO, whose overall responsibility includes implementation of the project EMP. At the field level, the project will be implemented by nine PIUs in each of the project counties and districts. The PMO and PIUs will be assisted by a loan implementation consultant team. The wetland ecologist will be a part of this team and will support the PMO and PIUs to implement the project wetland activities, focusing on the pilot Qihe River National Wetland Park (NWP).

F. Scope and Duration of Work

18. This position could be a firm or an individual engaged by the PMO. It is an independent position. It is not part of the PMO in-house environmental team or the implementing agencies. The specialist will report to the PMO. The position is [xxx person-months] over the entire project duration (5 years). The specialist should be recruited as soon as possible after loan effectiveness, as the first tasks include review of the detailed wetland designs.

G. Qualifications

19. The specialist will have: (i) a master's degree and/or equivalent experience in wetland ecology and management; (ii) at least 10 years work experience in wetland ecology, research, including wetland flora and/or fauna, wetland design, and the ecological impacts and management of river dredging and embankment; (iii) demonstrated experience in the preparation of wetland management plans; (iv) detailed knowledge and understanding of national regulations, policies, and requirements for wetland management in the People's Republic of China; and (v) ideally, proficiency in spoken and written English.

H. Tasks

20. Working closely with the PMO and PIU environmental officers, design institutes, other loan implementation consultants, river guards, and other stakeholders as relevant, the specialist will do the following.

21. Before construction:

- (i) Work with the design institutes to prepare the detailed project designs for the NWP, including: location, extent and design of the wetland habitats, management services, access roads, fencing, and signs; and, avoidance of sensitive sites.
- (ii) In particular, minimize the bank-side excavation for the establishment of deep pools and ensure the timing of this activity is restricted to the peak dry and time of lowest and slowest flows.
- (iii) Train the project agencies, including PMO and PIU Environment Officers,

contractors, and construction supervision companies, on staff protocols while working in the wetlands (e.g. workers prohibited to catch wild animals, what to do if an injured animal is found etc) as required by the EMP training plan.

22. During project implementation:

- (i) Provide hands-on support and on-the-job training to the PMO, forestry bureaus, river guards, and other relevant agencies for wetland management and monitoring for the NWP. The aim of the training is to enable these agencies to effectively manage the NWP and project facilities after project completion.
- (ii) Conduct pre- and post-training capacity assessments (at the beginning and end of the project) to assess stakeholder capacity for wetland management.
- (iii) Prepare training topics and materials tailored to the capacity and needs of local agencies and the specific objectives for management of the NWP i.e. ecological conservation, restoration of wetland habitats, and sustainable use for recreation and public education.
- (iv) Facilitate the participatory establishment of a management agency for the NWP. This may include: assisting the relevant bureaus of the Hebi City Government (HCG) to identify roles, tasks, and specific steps; drafting the roles and responsibilities of each agency; drafting the overall guiding charter for the management agency.
- (v) Lead the preparation of the first five-year management plan for the NWP. This will be based on the NWP Master Plan (2011–2020) and describe, for the first five years: specific objectives; measurable (quantitative- and time-based) targets for capacity building, ecological values, tourism, and management; roles and responsibilities of all relevant stakeholders; operation and maintenance of facilities in the park, including the project-supported facilities; and financing arrangements for operation and maintenance.
- (vi) With the ecological monitoring specialist, develop specific wetland ecological targets for the NWP, including (but not limited to): recovery of the Wild Soy and Qihe River Crucian Carp populations; seasonal counts of migratory waterbirds; and, survival and health of the seven types of wetland habitats and vegetation restored by the project.
- (vii) Identify the potential for: (a) expanding the role of the community river guards in management of the NWP; (b) new partnerships to support the NWP management, including with academic institutions in Henan Province or elsewhere.
- (viii) Circulate drafts of the management plan, organize and facilitate stakeholder consultation meetings to discuss the draft plan, and ensure that comments are addressed.
- (ix) Deliverables: (i) a final-draft five-year management plan for the NWP, which is ready for submission to the HCG for final review and official approval; (ii) a final report, describing the work of the specialist, lessons learned, and recommendation for follow-up.
- (x) Timelines: the final draft five-year management plan shall be submitted to the HCG no later than by the end of the second year of the project. This will give the specialist sufficient time to prepare the plan and remain working on the project while the plan is officially approved.

5. ECOLOGICAL MONITORING SPECIALIST

I. Background

23. The project will be coordinated by a PMO, whose overall responsibility includes implementation of the project EMP. At the field level, the project will be implemented by nine PIUs in each of the project counties and districts. The PMO and PIUs will be assisted by a loan implementation consultant team. The ecological monitoring specialist will be a part of this team and will support the Hebi City Government (HCG), through the PMO and PIUs, to develop and implement a long-term ecological monitoring program for the Qihe River in Hebi City.

J. Scope and Duration of Work

24. This position could be a firm or an individual engaged by the PMO. It is an independent position. It is not part of the PMO in-house environmental team or the implementing agencies. The specialist will report to the PMO. The position is [xxx person-months] over the entire project duration (5 years). The specialist should be recruited as soon as possible after loan effectiveness, to enable an early start to ecological monitoring.

K. Qualifications

25. The specialist will have: (i) a master's degree and/or related discipline in ecology; (ii) at least 10 years applied experience in the design of ecological monitoring programs for flora and/or fauna, including statistical design and software programs, data entry, analysis, and reporting; (iii) applied research and management experience in biodiversity conservation, including expertise in at least one area of wetland ecology, e.g. fish, wetland vegetation, and/or waterbirds; and (iv) ideally, proficiency in spoken and written English.

L. Tasks

26. Working closely with the PMO and PIU environmental officers, design institutes, wetland ecologist and other loan implementation consultants, and other stakeholders as relevant, the specialist will do the following.

- (i) Clarify and establish the specific objectives of the long-term ecological monitoring program, including: (a) to measure the ecological health of the Qihe River in Hebi City; and (b) to measure progress of the project activities for wetland conservation and species protection in the pilot Qihe River National Wetland Park (NWP).
- (ii) Identify the specific variables to be monitored, which may include: (a) within the NWP – Qihe River Crucian Carp, Wild Soybean, migratory waterbirds, wetland vegetation restored by the project; (b) Qihe River in the entire project area – water quality, hydrology.
- (iii) Describe existing HCG activities and arrangements for ecological and hydrological monitoring along the Qihe River, including within the NWP, including the locations of existing hydrological monitoring stations.
- (iv) For parameters which are already subject to some monitoring (e.g. water quality, hydrology), assess current strengths, weaknesses and opportunities. If existing arrangements are sufficient for the program objectives, assess and facilitate the integration of these into the program (or vice versa).
- (v) For new and/or existing parameters, develop the monitoring methods, frequency, training needs, and equipment.
- (vi) Work with the wetland ecologist to identify and design the parameters for the NWP.
- (vii) Design the monitoring program and methods for each parameter to be: (a) as simple as possible; and (b) requiring as little specialist equipment as possible.

- (viii) Prepare field data collection template forms for each parameter.
- (ix) Prepare a series of specific, simple, and direct questions to be answered by the results of long-term monitoring. These will help guide implementing agencies to prepare progress reports based on the monitoring data.
- (x) Work with the HCG agencies that are developing the Qihe River Management Information System (MIS) to be established by the project, in order to: (a) ensure that data is collected in a format that can be entered into the MIS; and (b) develop simple pre-programmed questions or analyses to assist analyses and preparation of progress reports.
- (xi) Prepare a user manual which describes all steps in the program, including procedures for field monitoring of each parameter, specific agencies assigned to each task, roles and responsibilities, data collection, data entry to the MIS, data analyses, and the preparation of progress reports.
- (xii) Pilot the monitoring program with all relevant agencies, including data collection, entry, analyses, and reporting.
- (xiii) Support the implementation of at least the first six months of the monitoring program.
- (xiv) For all tasks, include stakeholder consultations as needed to ensure strong inter-agency support and participation for the program.
- (xv) Deliverables: (i) a final report, which includes (a) final draft long-term ecological monitoring program, (b) user manual, (c) description of all activities, lessons learned, and recommendation for follow-up.
- (xvi) Timelines: the program and user manual shall be completed within the first year of project implementation. This will give the specialist sufficient time to lead the piloting and at least first six months implementation of the program.

APPENDIX EMP-2. ECOLOGICAL MONITORING PROGRAM – GUIDING NOTES

1. The project will establish a long-term ecological monitoring program for the Qihe River within Hebi City, including the pilot Qihe River National Wetland Park (NWP). An ecological monitoring specialist will be recruited as part of the loan implementation consulting services to support the design, piloting, and implementation of the program. The objectives of the program and tasks of the specialist are described in the terms of reference in Appendix EMP-1. It is anticipated that the program will include monitoring of: (i) vegetation restoration in the barren hills and NWP by the project; (ii) population monitoring for a small number of threatened species e.g. Qihe River Crucian Carp, Wild Soybean, and key communities such as migratory waterbirds. This appendix provides guiding notes to assist the design of the program.

2. **Barren hills component.** The 19 barren hills in the project have been divided into four types (see PPTA Supplementary Document 1). Monitoring could be conducted at one hill from each type, with two survey locations (one south facing and one north facing) identified at each hill. Monitoring could be conducted two times every year (May and August) during the construction phase and once a year (August) in the operation phase. Fieldwork would comprise surveying a 20x30 m quadrat, including record of relative frequency/coverage of each species, measuring height and diameter of trees in the sampling area, and taking representative photos of different species.

3. **Wetland restoration component in the pilot NWP.** For the wetland restoration component, six locations (1x1 m) are suggested for monitoring: two for aquatic area, two for riparian buffer strips, and two for the river bank.

4. Data could be recorded using a table similar to Table 1 below.

Table 1: Vegetation Monitoring Record Table

Species name	Habitat (tree/shrub/herb)	Height	Diameter	Protection Status	Exotic/ Native
Species1					
Species2					
Species3					
Etc.					

5. **Migratory waterbirds along the Qihe River, including the pilot NWP.** For this program, “waterbirds” could be defined as ducks, geese, storks, and herons. Point counts should be conducted three times a year: once in the winter, once in the early summer, and once in the peak autumn migration season. Survey route should follow along the bank of the Qihe River (from Panshitou Reservoir to the confluence of Qihe River with Wei river), with point counts undertaken approximately 5 km apart. Within the pilot NWP, point counts should be selected at 1 km intervals. All waterbirds heard or observed should be recorded at each point count location, as well as the following information: date, GPS location, weather condition, and habitat description. Any notable behavior (e.g., roosting, nesting) should also be recorded.

6. **Fish.** Species and/or communities for monitoring should be selected. At the least, Qihe River Crucian Carp, a key species of the Qihe River, should be included in the program. Monitoring methods will need to be tailored to the species and/or communities selected. In general, the methods might include: (i) monitoring once a year (in the autumn) at three to five sampling sites in the upper, middle, and down-stream sections of the Qi; (ii) fish sampled could be by netting and/or non-lethal electro-fishing. Records should be made of the species, relative abundance and sex ratio of fish recorded; (iii) at each site, general habitat condition and water

quality parameters should also be monitored, including temperature, speed, depth, sediment type, dissolved oxygen, pH, water transparency, and electrical conductivity. Survey staff should carry out interviews with local residents, fishing management department, and fisherman to collect the fishing data along the Qihe River.

Table 2. Sample Fish Monitoring Record Table

Site	No.					
Survey time	Investigators					
Fishing method	Total fishing catch / kg					
Composition information						
Common name	Scientific name	Numbers	Body weight	Body length	Index of gonad	Sex ratio

7. **Aquatic Invertebrates.** Aquatic invertebrates could be sampled at the same 12 locations described shown in section IV of this report. At each site, it is suggested two hand screen samples are collected. Kick samples (whereby an aquatic net is positioned in the water at arms' length downstream and the stream bottom is disturbed by foot, so that the dislodged invertebrates are carried into the net) should be collected from fast-water habitats. Dip-net samples (whereby an aquatic net is pushed through vegetation and sediments) should be collected from slow water habitats (especially bank areas). Each kick-sample should cover an area of at least one square meter, and each dip-net sample should be taken from about 10-20m of pool and bank habitat. These four samples would be supplemented by "visual" collections for a period of 10-20 minutes per site. A total of at least 100 organisms is recommended, if fewer than 100 specimens are sampled, additional kick-net, dip-net, and visual samples should be taken.

8. The net contents are emptied into a pan of stream water. Larger rocks, sticks, and plants may be removed from the sample if invertebrates are first removed from them. The contents of the pan are poured into a sieve to remove smaller organisms and debris. The sample is then transferred to a bottle and preserved by adding 95% ethyl alcohol. Samples can then be sorted in the laboratory, and specimens identified using a stereo-microscope. To maintain taxonomic-level consistency, organisms should be identified to as lowest level as possible. Specimens too immature to identify with confidence to the taxonomic level in references should be discarded.

Table 3. Aquatic Invertebrates Monitoring Record Table

Name of Sample Site _____		Site No. _____	
Collected by _____		Sampler Type _____	
Sorted by _____		Collection Card No. _____	
Analyst _____		Date Collected _____	
Ephemeroptera		Megaloptera	
		Crustacea	
Plecoptera			
		Oligochaeta	
		Diptera	

Trichoptera					
Odonata					
			Mollusca		
Coleoptera					
			Other		

Total No. Organisms _____ Diversity Index (H')

Species richness _____ Percent Model Affinity

EPT richness _____

Notes:

STAKEHOLDER COMMUNICATION STRATEGY

A Stakeholder Communication Strategy (SCS) is required by ADB to ensure inclusiveness, transparency, and meaningful participation¹ of concerned stakeholders for the *Henan Hebi River Environmental Improvement and Ecological Conservation Project*. It provides an agreed communication platform for key stakeholders particularly between the project's affected groups and the executing and implementing agencies, ensure that the stakeholders' views and interests are fully integrated into the project design, implementation and operation. Specifically, the SCS could help in ensuring a regular flow of reliable project information; and inclusion of vulnerable groups in the distribution of project benefits during project implementation and operation. The communication strategy matrix outlines and/or identifies key messages, means of communication, and timeline of delivery for various stakeholders during the project cycle.

The SCS serves to inform and involve project beneficiaries and communities in relevant project activities, enhance government agencies' capacity to manage the project, enhance project benefits and mitigate negative impacts. It complements the Consultation and Participation Plan (C&PP) prepared for the project. Stakeholders could be engaged to participate through various types, i.e., information sharing about the project, consultations, shared decision making, responsibility or control. During project design and implementation stage, the EA/PMO will conduct meetings with concerned stakeholders, public awareness campaign on solid waste management and related subcomponents, capacity buildings and other methods.

The key stakeholders identified for the project include the following: (i) government agencies responsible for project design, management and implementation (i.e., HCG, Qihe River Ecological Conservation and Construction Office, Planning Bureau, Water Resources Bureau, Forestry Bureau, Environmental Protection Bureau, Qi County Government, Qibin District, Xun County, Housing and Urban-Rural Construction, Women's Federation, Poverty Alleviation Office, etc.); (ii) project beneficiaries (including women, farmers, and other vulnerable groups); (iii) community leaders; (iv) private sector (including NGOs, community-based organizations, business sector and local media that may have interest on the project.

¹ Meaningful participation is defined as a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues. ADB Safeguard Policy Statement 2009.

COMMUNITY COMMUNICATION STRATEGY MATRIX

Strategic Elements						Timing/ Implementation Phase	Work Plan Elements		Evaluation
Objectives	Key Risks/ Challenges	Audiences/ Stakeholders	Current and Desired Attitudes/ Behaviors	Messages/ Information	Activity/ Channels		Responsibility	Resources Needed	Expected Outcomes
A. On Project Outputs / Subcomponents:									
Output 1: Ecological conservation (1.1 Qihe River Upstream Ecological Protection, and 1.2 Qihe River Wetland Conservation and Rehabilitation)									
(a) To ensure reliable and regular flow of information and decision-making by engaging concerned stakeholders in the consultation process. (b) To increase level of awareness of the stakeholders including project beneficiaries on subcomponents/ specific issues (i.e., wetland management, barren hill greening, biodiversity/ ecological conservation.	(a) Managing expectations of affected persons / HHs on issues i.e., land acquisition/resettlement (i.e. fair compensation and transparency during project implementation) (b) Managing perceived threats regarding project's potential negative impacts on agricultural production/ livelihoods of the farmers and forestry production.	(a) Affected households/ communities; (b) Govt. Agencies (c) Village leaders (d) Farmers (e) Women (f) Contractors for the barren hill greening, wetland conservation and rehabilitation (g) Others (schools, cleaners /tour guides, and community volunteers in the wetland park.	(a) Stakeholders understand and appreciate the significance of the project/components; and benefits the people will get from the project (i.e., job opportunities during project implementation, operation and maintenance), ecological protection (water quality, importance of barren hill greening, wetland conservation/ rehabilitation, etc.). (b) Stakeholders continue to support project to prevent delay in project implementation.	(a) Project impact; sub components and activities; (b) Project's positive impacts /benefits (i.e., jobs created, improvement of water quality, importance of barren hill greening, wetland protection/rehabilitation, biodiversity protection - how to keep the river clean, sustainable utilization of resources (i.e., aquatic resources, forest, etc.); (c) Potential and unintended negative impacts of the project (i.e., land acquisition /resettlement; loss of income, reduction in agricultural production, etc.);	(a) Public consultations or community assembly meetings; (b) Meetings with concerned govt. Agencies; (c) Workshops/ public awareness; (d) Small groups meetings or consultations with the affected persons/ HHs; (e) Public Information Brochure, posters, etc. (f) Bulletin boards/public notices boards. (g) Media (radio, newspaper) (h) Presentations to special interest groups such as environment, fishery, agricultural	From project outset through project implementation	(a) PMO HCG; and Qibin District (b) Qibin District Municipal Admin Office, Forestry Bureau, Women Federation, Poverty Alleviation Office of Qibin District, and other agencies (c) Consultants who will be hired during project implementation;	Budget included in the project	(a) Issues/concerns raised by the affected people/HHs are addressed; (b) Affected people/HHs and govt. Agencies support project implementation and operation. (c) Addressed complaints/ grievances raised by the APs/HHs and communities; minimized and/or reduced complaints on the project (keep records of complaints and actions taken). (d) Community Participation in various activities as appropriate (jobs created during project implementation and operation, public awareness

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				and mitigation measures (entitlements, income restoration for the APs/HHs, etc. - refer to RPs). (d)Project implementation schedule and process; implementation arrangements; (e)Communication process or feedback mechanism (grievance redress mechanism)	groups, etc.				campaign, public consultations, meetings, capacity building/training, sustainable solid waste management, greening program, wetland management, etc.) (e) Cleanliness in the wetland park is maintained; water quality and conservation of biodiversity (fish, birds, plants/trees, etc.).
Output 2: Qihe River Mainstream and Tributary Watercourse Improvement (include activities, e.g., riverside greening, slope protection, widening, dredging, etc.)									
(a) To ensure reliable and regular flow of information and decision-making by engaging concerned stakeholders in the consultation process. (b) To inform the local people including women, low	(a) Managing expectations of affected persons / HHs on issues i.e., land acquisition/re settlement (i.e. fair compensation and transparency during project implementation) .	(a)Local people/ affected households/ communities; (b) Govt. Agencies (c) Village lead (d) Contractors for the civil works/ riverside	a) Stakeholders understand and appreciate the significance of the project/ components, and benefits the people will get from the project (i.e., job opportunities during project implementation, operation and	a) Project Outcome, Impact, Outputs; sub-components and activities; (b) Project's positive impacts /benefits (i.e., jobs created, improvement of water quality, importance of barren hill greening,	As above	From project outset through project implementation	(c) PMO HCG; Qibin District and Qi County) (d) Qibin District Municipal Admin Office, Forestry Bureau, Women Federation, Poverty Alleviation	Budget included in the project	(a) Issues/ concerns raised by the affected people/HHs are addressed; (b)Affected people/HHs and govt. Agencies support project implementation and operation. (c) Addressed

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income HHs how they could avail of benefits from the project (i.e. jobs created during implementation, operation and maintenance such as river guards, participating in greening of riverbanks, civil works, etc.). (c) To increase level of awareness of the stakeholders including project beneficiaries on flood control, river banks greening, importance of water quality, and environmental protection).	(b) Managing perceived threats regarding project's potential negative impacts.	greening and other activities.	maintenance). (b) Stakeholders continue to support project to prevent delays in project implementation. (c) Sustainability of the project and ensuring cleanliness of the river/tributaries/ watercourse	wetland protection/rehabilitation, biodiversity protection - how to keep the river clean, sustainable			Office of Qibin District, and other agencies (c) Consultants who will be hired during project implementation		complaints/ grievances raised by the APs/HHs and communities (keep records of complaints and actions taken). (d) Number of jobs/labor force various jobs created during project implementation and operation such as riverbanks greening, river guards, etc.); (e) Cleanliness/ maintenance river mainstream/ tributaries; flood is mitigated. (number of participants in public awareness campaign on flood prevention shall be sex disaggregated);
Output 3: Wastewater and Solid Waste Management (3.1 Qibin District wastewater management; 3.2 Qi County wastewater management; and 3.3 Qi County solid waste management)									
(a) To engage the local people/	(a) Trust of information	(a) Project beneficiaries/	a) Stakeholders understand and	(a) Project description, how	(a) Workshops/ Public	From project outset through	(a) PMO (HCG, Qibin	Budget included in	a) Affected people/

Strategic Elements						Work Plan Elements		Evaluation	
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<p>project beneficiaries in public hearing, public consultations on solid waste/waste water tariff based on HHs' willingness to pay and affordability. (b) To inform the local people including women, low income HHs how they could avail of benefits from the project (i.e. jobs created during project cycles). (c) To increase level of awareness of stakeholders including project beneficiaries on solid waste and wastewater management; improved sanitation, solid waste segregation and environment protection.</p>	<p>(b) HHs willingness to pay/affordability on possible tariff fees for solid/wastewater management. (c) Managing expectations (d) Local people informed of jobs/capacity building available.</p>	<p>local people including women, and other sectors</p>	<p>support the project and impacts, and potential unintended risks (negative impacts). (b) Stakeholders continue to support project to prevent delays in project implementation.</p>	<p>to avail and/or have access to project benefits (i.e solid waste management; jobs created during project implementation/ operation such as cleaners, CES, etc.); (b) Information on water solid waste management, solid waste segregation, improved sanitation, environment protection, and other related topics; (c) Importance of community participation/ involvement of local people/communities during the operation stage to ensure sustainable implementation of the project (including payment of solid/wastewater tariff.</p>	<p>consultations/ meetings, b) Consultations through meetings/ FGDs c) Regular feedback mechanisms</p>	<p>project implementation</p>	<p>District and Qi County); (b) Concerned government Agencies/ Bureaus project areas (Forestry Bureau, Women Federation, Poverty Alleviation Office, and other agencies); (c) Consultants who will be hired during project implementation;</p>	<p>the project</p>	<p>households understand and appreciate the importance of charging tariffs, or increasing tariff costs. (b) Expressed support to project implementation</p>
B. On Specific Issues:									
B.1 Resettlement issues:									
(a) To ensure	-Managing	-Affected	-Stakeholders	-ADB Safeguard	-Consultation	- During the	(a)HCG /	Budget	-Affected

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reliable information sharing and active consultations with the affected households and communities about the RPs; (b) To address issues/concerns about resettlement. (c) To inform the affected households/people on grievance redress mechanism process and how to address their concerns/complaints.	expectations from the affected households -Possible complaints or clarification from the APs/HHs on entitlements/compensation. -Where to raise complaints (grievance redress mechanisms).	Persons/ households; -Concerned govt. agencies/ local govt. units. -Community/ village leaders -Media	support project implementation to prevent delays in civil works, and related activities -Concerns raised by the affected households and NGOs are addressed. LGUs support the implementation of the Resettlement Plans (RPs).	Policy; - Project Description (project areas, implementation period, length and width of roads, number of affected households, etc.) - Project implementation schedule and process; -Implementation of RPs (compensation, procedures, etc.); -Grievance Redress mechanisms; where and to whom APs/HHs shall file complaints.	meetings; -Information sharing -Public consultations/assembly meetings in the villages/affected households and LGUs. - Small groups meetings or consultations with affected households; -Print materials, brochures -Bulletin boards/public notices boards. -Media (radio, newspaper)	detailed design phase (before and after the detailed design measurements /updating of RPs; Prior to start of civil works or construction -As the need arise, there is a need to meet promptly to discuss and address key issues/ concerns raised by the affected households.	PMOs; IAs (b) Consultants who will be hired during project implementation (resettlement/ , social safeguards, specialist, resettlement external monitoring team). (c) LGUs (d) Other sectors	included in the resettlement costs/ project	households understood the project and its impacts (positive and negative). -Affected households and LGUs support in implementation of RPs. -Complaints are addressed in a transparent and prompt manner; -Organized grievance redress mechanisms
B.2 Environment issues:									
(a)To ensure reliable and regular flow of information and decision-making by engaging concerned stakeholders in consultations. (b) To discuss and address potential environmental	(a) Possible complaints from the the communities/ local people if environmental issues (i.e., dust, noise, pollution, etc.) are not addressed. (b) Non-compliance of	(a) Concerned Govt. Agencies/ Bureaus (Forestry, Environment , etc.); (b) Contractors/ consultancy firms/group hired by	(a) Stakeholders/ LGUs continue to support project implementation to prevent delays in project completion; (b) Mitigation measures as stated in the EIA/EMP are	(a) ADB Safeguard Policy Statement; (b) Concerned govt. agencies/ Bureaus involved in implementing safeguard policy; (c) Environmental issues/ concerns and mitigation measures;	(a) Public awareness campaign; (b) Consultation /meeting by the EA/ PMO with the concerned agencies/ contractors; (c) Site visits during monitoring	(a) Prior to start of civil works or construction (b) As part of the tendering process (c) Communication agreement included in tender document and	HCG/PMO; IAs (b) Consultants (Environment Specialist); (c) Contractors/ consultancy firms/group the PMO. (d) Other project	Included in the budget	(a) Compliance of safeguards policy (as stated in the EIA/EMP) by the contractors and other stakeholders. (b) Environmental impacts/ issues are addressed and absence of

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Objectives	Key Risks/Challenges	Audiences/Stakeholders	Current and Desired Attitudes/Behaviors	Messages/Information	Activity/Channels	Timing/Implementation Phase	Responsibility	Resources Needed	Expected Outcomes
impacts of the projects. (c) To provide opportunity for stakeholders to provide input into design of environmental management in response to proposed works; and in relation to ensuing changes. (d) To increase the level of awareness of various stakeholders (including the local people) on various environmental related issues.	contractors/ consultancy group hired by EA/ PMO during project implementation on safeguard policy of ADB (as stated in the EMP/EIA) (c) Complaints from community members re: perceived that may be associated with any of the project components/sub-components and activities.	PMO during project implementation (c) Affected communities /households (d) Media (g) Other	implemented; (c) Concerns raised by the affected households are addressed. (d) Recognition of the importance of the barren hill greening, wetland protection/ rehabilitation, solid waste/waste water management, ecological protection, etc.	(d)Contractors' compliance with the ADB safeguard measures (refer to EIA/EMP) (e) Health and safety, and environment are important responsibilities of the project; include a clause in tender/contract process, contractors will be held responsible for non compliance	(d) Consultation/ meeting local communities and village leaders; (e) Printed or IEC materials (brochures, etc.). (g) Capacity building/ orientation for community volunteers in the wetland park/ river guards/ cleaners, etc.	subsequently the contract. (d) As the need arise, regular meetings to discuss and address key issues/ concerns raised by the affected households	implementers		complaints. (c) Community has interest in, and is supportive of the project (d) Community develops short and long term ownership of project.
B.3 Gender issues:									
(a) To increase the level of awareness of concerned govt. agencies (project implementers including contractors) on gender mainstreaming. (b) To encourage support from the contractors to hire women in	(a) Possible gender bias by contractors in hiring women during civil works/ construction. (b) Salary for civil works may not be competitive with the prevailing daily wage in other jobs existing outside	LGUs (all levels) especially the village leaders; -Govt. Agencies/bureaus; -Local people including women interested to participate in capacity	(a) Women's participation in civil works (as part of gender mainstreaming) to achieve the target indicators and activities as stated in the GAP. (b) Compliance of the contractors to international core labor	(a) ADB Policy on gender/ Gender mainstreaming activities as stated in the gender action plan (GAP). (b) Overview on Gender awareness (sex and gender, gender equality; gender roles, project	(a)Training/ Workshop, information sharing. (b) IEC materials: posters, training manuals and modules (c) Field visits/GAP monitoring (d) Meetings with the	- GAP monitoring -or as required	-HCG/PMOs; IAs (i.e., Women Federation) -Concerned govt. agencies/ bureaus; -Contractors/ consultants hired for the project (social, gender & community	Budget for hiring 2 consultants (social, gender and community specialist)	Achieved the Target indicators as stated in the GAP (refer to GAP and SDAP prepared for the project).

Strategic Elements						Work Plan Elements		Evaluation	
Objectives	Key Risks/ Challenges	Audiences/ Stakeholders	Current and Desired Attitudes/ Behaviors	Messages/ Information	Activity/ Channels	Timing/ Implementation Phase	Responsibility	Resources Needed	Expected Outcomes
civil works. (c) To engage women in capacity building skills training relevant to the project. (d) To engage the local people including women in various community participation activities (i.e., meetings, consultations, public awareness campaigns, job opportunities, etc.).	the villages/ project areas townships. (c) Limited jobs available for local people especially women during civil works/ construction.	building/train ing, civil works or other activities where they will have the opportunity to work and earn income.	standards (CLS) and safeguard measures. (c) Gender equity in attendance or participation in training/public awareness activities (men and women).	impacts/or how local people including women will be benefited by the project); (c) GAP implementation and monitoring and reports will be submitted to ADB.	contractors and laborers at the field. (e) Consultation through FGD/interview with women, village leaders, etc.		specialist).		

CONSULTATION AND PARTICIPATION PLAN

A. Rationale

Consultation and Participation Plan (C&PP) for the concerned stakeholders within the project areas is required by ADB to ensure social inclusion. The purpose of this plan is to engage the stakeholders in meaningful consultation and decision-making process; inform them about the project and consult them on various issues relevant to the project/subcomponents and activities during project design and implementation. Consultation and participation serve venue for the key stakeholders (i.e., government agencies, project beneficiaries, women, etc.) to be informed about the project, clarify and express feedbacks, issues and concerns, and suggestion; learn how they will be benefited by the projects; participate in decision-making and take action and/or be involved during the design, project implementation and operation/maintenance stages.

B. Objectives

1. To ensure that key stakeholders are well-informed, consulted about the project, in all phases of project cycle (planning, implementation and operation/maintenance), enable them to participate in decision making and how they will be involved or contribute to integrated water resources management of the Qihe River Basin.
2. To increase the level of awareness of various stakeholders about the project and subcomponents (i.e., solid waste management, wetland management, and biodiversity protection, barren hill greening, greening along river banks, etc.).
3. To ensure participation among the local people and work harmoniously with the concerned implementing agencies and identify ways on how the communities will be benefited by the project/subcomponents, and ensure its sustainability.

CONSULTATION AND PARTICIPATION PLAN (C&PP) SUMMARY CHART¹

Stakeholder Group	Objective of their intervention	Type of Participation and Depth	Participation methods		Time line		Cost Estimate
	Why they are included		Method	Who will be responsible	Start date	End date	
Government agencies/ bureaus/local government, units; Qihe River Ecological Conservation and Construction Office, Planning Bureau, Water Resources, Forestry, Environmental Protection, Qi County; Qibin District, Xun County, Housing & Urban-Rural Construction, Women's Federation, Poverty Alleviation Office, etc.).	<p>To be informed about the project/subcomponents and activities, implementation schedule/arrangements; agencies responsible for project implementation in accordance with the TOR.</p> <p>To provide information on the budget, policies on procurement, ADB safeguard policy, ADB policy on gender mainstreaming, and other relevant information.</p> <p>To enable the concerned agencies/IAs to express their needs/concerns and/or clarify matters to ensure that the projects/subcomponents are implemented in a timely manner and in accordance with the ADB approved guidelines.</p>	Information sharing, regular meetings, consultation, shared decision making, and shared responsibility Participation (high)	Meeting Workshop	HCG/PMO PMO Qibin District; Qi County, etc. Consultants hired by PMO	2016	2021	Budget for hiring 2 national social, gender & community participation specialist
Agencies/ bureaus/ responsible for implementing the project/sub components, Agencies responsible for implementing the RPs/EIA, GAP, SDAP, etc. (see	<p>Representatives of government bodies in the province, cities, townships and villages are responsible for decision-making and assist during project implementation.</p> <p>To define the roles of each agency during project implementation, elicit their support, and harmonize the projects with the existing programs/plans of the government agencies/bureaus.</p> <p>To enable the concerned agencies/IAs to express their needs/concerns and/or clarify matters to ensure that the projects/subcomponents are implemented in a timely manner and in accordance with the ADB approved</p>	Regular meetings, consultation and shared decision making/ responsibility Participation (high)	Meeting Workshop Public consultation	HCG/PMO PMO Qibin District; Qi County, etc. Consultants hired by PMO Local govt. units' heads Other concerned agencies	2016	2021	Budget included in the project

¹ ADB template for preparing C&PP summary chart.

Stakeholder Group	Objective of their intervention	Type of Participation and Depth	Participation methods		Time line		Cost Estimate
	Why they are included		Method	Who will be responsible	Start date	End date	
<i>list of agencies above)</i>	guidelines.						
Project beneficiaries/local people in the affected communities Including the affected persons/HHs, women, farmers, and other stakeholders.	<p>Beneficiaries/households are interested on how they could access project benefits (i.e., employment/jobs, public awareness, training, community mobilization/participation, and other activities), and share inputs/decision-making in all project cycles (design, implementation and monitoring) To provide information to households/individuals that could experience potential negative impacts (i.e., land acquisition/ resettlement, temporary or permanent loss of income, etc.) or face the risk of being marginalized by the project impact.</p> <p>To explain the entitlement/compensation and assist the affected HHs how they could fully utilize the assistance or compensation that will be provided so that they will have long-term source of income.</p> <p>They are the project beneficiaries, and are the direct stakeholders of the project. They need to be informed, participate in decision-making, implementation, monitoring and control.</p> <p>To engage the local people/communities in planning or identifying other community participation activities that are relevant per subcomponent (i.e., training/seminars, public awareness, consultations, mobilization of cleaners/river guards, community volunteers, etc.).</p>	<p>Information generation/ sharing, consultation and shared decision making/ responsibility</p> <p>Participation (medium)</p>	<p>Meeting FGD Public consultation</p>	<p>HCG/PMO PMO Qibin District; Qi County, etc. & other IAs Consultants hired by PMO Local govt. Heads/Village heads</p>	2016	2021	Budget included in the project
Community-based organizations such as: -farmers groups, women associations, etc.; Contractors	<p>Representatives of the various community-based organizations responsible on issues/matters concerning barren hill greenings, wetland conservation and rehabilitation, solid waste and waste water treatment/ management, biodiversity/ecological conservations, etc. They need to be informed, participate in decision-making, project implementation, monitoring and control.</p> <p>To encourage the contractors to hire the local people including women, low income HHs, and other vulnerable groups to have access to project benefits (i.e., jobs created during implementation, operation and maintenance); provide training/capacity building on technology/species of trees and maintenance for the barren hill greening; wetland management/rehabilitation, greening of riverbanks, solid waste management, and</p>	<p>Information sharing, Consultation, and shared decision making, and shared responsibility, and control</p> <p>Participation (medium)</p>	<p>Meeting FGD Public consultation</p>	<p>HCG/PMO PMO Qibin District; Qi County, etc. & other IAs Consultants hired by PMO</p>	2016	2021	Budget included in the project

Stakeholder Group	Objective of their intervention	Type of Participation and Depth	Participation methods		Time line		Cost Estimate
	Why they are included		Method	Who will be responsible	Start date	End date	
	other project subcomponents.						
Women	To ensure inclusiveness of women and that they are able to benefit from the project by participating in consultation assembly meetings, tariff setting for solid/waste water treatment subproject), access to linkages or capacity building that may provide them employment opportunities in eco-tourism related jobs, civil works, operation and maintenance of the subprojects.	Information sharing/generation Consultation, and shared decision making, and shared responsibility, and control Participation (medium)	Meeting FGD Workshop Public consultation	HCG/PMO; PMO Qibin District; Qi County, etc. Consultants hired by PMO Local govt. Heads/Village heads LGU/ agency heads Other govt. Agencies: (Women Federation, Poverty Alleviation Office, etc.); NGOs	2016	2021	Budget included in the project
Consultancy firms/agencies and organizations that will be selected by the EA through the PMO to implement various project components as approved in the ADB loan/project/	The consultancy firm/consultants that will be selected by the PMO will ensure that the project outputs and activities, key indicators, etc. will be implemented as planned; inform and engage the people to participate in the decision-making, ensure that social safeguard/gender mainstreaming plans/activities are implemented; conduct capacity building, monitoring and evaluation. To assist the PMO in coordinating and/or working with various government agencies/bureaus; oversee, monitor and compliance implementation (as stated in the TOR; reports submitted to ADB, etc.)	Regular meetings, Information sharing, Consultation, and shared decision making, and shared responsibility & control Collaboration (high)	Meeting Workshop		2016	2021	No budget required